UNITED STATES AIR FORCE

OCCUPATIONAL SURVEY REPORT

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AIRCRAFT COMMUNICATION AND NAVIGATION SYSTEMS

AFSC 2A4X2

OSSN 2306

NOVEMBER 1998

**OCCUPATIONAL ANALYSIS PROGRAM
AIR FORCE OCCUPATIONAL MEASUREMENT SQUADRON
AIR EDUCATION AND TRAINING COMMAND
1550 5TH STREET EAST
RANDOLPH AFB, TEXAS 78150-4449**

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PREFACE

This report presents the results of a joint Air Force Occupational Survey of the Communication and Navigation Systems (AFSC 2A1X3) and Aircraft Communication and Navigation Systems (AFSC 2A4X2), with special emphasis on AFSC 2A4X2, Aircraft Communication and Navigation Systems career ladder. Authority for conducting occupational surveys is contained in AFI 36-2623. Copies of this report and pertinent computer printouts are distributed to the Air Force Functional Manager, the operations training location, all major using commands, and other interested operations and training officials.

The survey instrument was developed by First Lieutenant Todd L. Osgood, Inventory Development Specialist, with computer programming support furnished by Ms. Jeanie C. Guesman. Mr. Richard G. Ramos provided administrative support. Mrs. Joan St John, Occupational Analyst, analyzed the data and wrote the final report. This report has been reviewed and approved by Lieutenant Colonel Roger W. Barnes, Airman Analysis Section, Occupational Analysis Flight, Air Force Occupational Measurement Squadron (AFOMS).

Additional copies of this report can be obtained by writing to AFOMC/OMYXI, 1550 5th Street East, Randolph AFB Texas 78150-4449, or by calling DSN 487-5543. For information on the Air Force occupational survey process or other on-going projects, visit our web site at http://www.omsq.af.mil.

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SUMMARY OF RESULTS

1. **Survey Coverage**: Both the Communication and Navigation Systems and the Aircraft Communication and Navigation Systems career ladders (AFSC 2A1X3 and 2A4X2) were surveyed jointly to obtain current task and equipment data for use in examining training programs. Survey results are based on responses from 1,491 Active Duty (AD), 453 Air National Guard and 393 Air Force Reserves (AFRES) members worldwide. The majority of this specific report, however, will primarily focus on members in the 2A4X2, Aircraft Communication and Navigation Systems, career ladder.

2. **Career Ladder Structure**: The specialty job analysis associated with this report included respondents from both career ladders. Structure analysis identified three clusters and eight jobs: C-130 ADF Maintenance Job, General Avionics Cluster, Shop Communication and Navigation Cluster, RF Multiplexer (RF MUF) Repair Job, Component Repair Job, Field Training Detachment (FTD) Job, Training Job, Tool Crib Monitor Job, Mobility Job, Supervision Cluster, QA Inspector Job, and Maintenance Administrator Job, accounting for 85 percent of the total sample. The remaining 15 percent, for one reason or another, did not group into any one of these jobs or clusters.

3. **Career Ladder Progression**: The AFSC 2A4X2 career ladder is typical in that 3- and 5-skill level members spend most of their time performing technical tasks, while 7-skill level members are typically first-line supervisors performing a mixture of technical and supervisory tasks. Both AD and AFRES personnel work primarily in the General Avionics Cluster.

4. **Training Analysis**: First-enlistment AFSC 2A4X2 members spend approximately 94 percent of their duty time devoted to technical and administrative or supply functions. Analysis of career ladder documents indicates a fair level of support for the current Specialty Training Standard (STS). All of the unsupported STS elements should be reviewed for possible deletion from the STS. These items received little to no support from percent members performing data. Also, there were many technical tasks performed by a high percentage of members and possessing a very high TD rating which could not be matched to the STS. These tasks should be reviewed by career field functional managers and technical training subject-matter experts as to the possible need for their inclusion in the STS. Analysis of the Plan of Instruction (POI) revealed that some performance-coded elements are not supported by survey data. Training personnel and subject-matter experts should review these documents in the Training Extract to determine if these elements warrant retention.

5. **Job Satisfaction Analysis**: AFSC 2A4X2 members are generally more satisfied with their jobs in all areas than are members of a comparative sample of Mission Equipment Management personnel. Members of the current sample are relatively more satisfied with their jobs than 2A4X2 personnel surveyed in 1994. Job satisfaction data of specific career ladder jobs show most job members are satisfied with their jobs. However, three jobs, RF Multiplexer, Tool Crib Monitor, and Maintenance Administrator, did show some fairly low satisfaction ratings.

6. **Implications**: The AFMAN 36-2108 *Specialty Descriptions* accurately describe the jobs and tasks personnel at all skill levels perform. Job satisfaction is satisfactory for identified jobs, and satisfaction ratings of AFSC 2A4X2 personnel were generally higher than those of the comparative sample. The training document analysis revealed some unsupported areas of the STS that should be considered for deletion. There are also some technical tasks with high percent members performing not referenced to the STS that should be considered for inclusion in the STS. Training personnel and career ladder functional managers should review this document to ensure it is complete and appropriate. The training document revealed that the POI is well supported.

OCCUPATIONAL SURVEY REPORT (OSR)
AIRCRAFT COMMUNICATION AND NAVIGATION SYSTEMS
CAREER LADDER
(AFSC 2A4X2)

INTRODUCTION

This is a report of an occupational survey of the Aircraft Communication and Navigation Systems (AFSC 2A4X2) conducted by the Air Force Occupational Measurement Squadron. This survey, containing Active Duty (AD), and Air Force Reserve (AFRES) personnel was conducted to identify current utilization patterns among incumbents, and to provide current data for use in reviewing and updating career ladder documents and training programs. The last occupational survey of this AFSC was published in January 1994.

Background

As described in the 11 March 1998 AFMAN 36-2108, *Airman Classification*, Specialty Summary, Aircraft Communication and Navigation Systems (2A4X2) members perform organizational-level maintenance on avionics communication and navigation systems. They advise on problems maintaining aircraft communication and navigation systems. Personnel remove, install, inspect, maintain, and operate aircraft avionics communication and navigation systems. They perform production maintenance functions.

Entry into the AFSC 2A4X2 career ladder is from a 104-day long training course conducted at Keesler AFB MS. This course includes application of electronic principles (EP), circuit analysis, and circuit testing; flight line practices including tuning, adjusting, performance testing and troubleshooting using selected command representative avionics systems with associated technical orders (TOs) and equipment; and use of maintenance and inspection forms and tags, AF TOs, safety and security directives. Subjects taught in training are very high frequency (VHF) (AM and FM), ultra high frequency (UHF), and high frequency (HF) radios, interphone equipment, VOR/ILS, tactical air navigational system (TACAN), radar altimeters, identification friend or foe (IFF) transponder (including Mark XII), search and weather radar, Doppler navigation systems and global positioning systems. Performance-oriented core automated maintenance systems (CAMS) training is taught under maintenance data collection. Entry into the career ladder currently requires an Armed Services Vocational Aptitude Battery score of 67 Electronics and a strength factor of J (60 lbs).

SURVEY METHODOLOGY

Inventory Development

The data collection instrument for this occupational survey was USAF Job Inventory (JI) OSSN 2306, dated November 1997. A tentative task list was prepared after reviewing pertinent career ladder publications and directives, and tasks from previous applicable OSRs. The preliminary task list was refined and validated through personal interviews with 29 subject-matter experts (SME) selected to cover a variety of major commands (MAJCOM) at the following locations:

BASE	UNIT VISITED
Keesler AFB MS	332 TRS
Hurlburt Field FL	16 CRS
Charleston AFB SC	437 LSS, 437 AGS, and 637 AGS
Travis AFB CA	60 LSS
Tinker AFB OK	552 CRS and 507 AGS
Davis-Monthan AFB AZ	355 CRS
Little Rock AFB AR	50,61,62 AS and 314 LSS
Barksdale AFB LA	11 and 93 BS
March AFB CA	163 ARW and 452 MXS
Edwards AFB CA	412 CRS and 450 LTS

Others contacted include Air Force Personnel Center (AFPC) classification personnel, training and resource managers, and the Air Force functional manager.

The resulting JI contains a comprehensive listing of 1,191 tasks grouped under 20 duty titles, with a background section requesting incumbents to answer questions such as their grade, job title, component status, work schedule, functional area, test equipment used or operated, aircraft on which maintenance is performed, time in present job, time in service, and job satisfaction.

Survey Administration

From November 1997 to March 1998, base training offices at operational bases worldwide administered the inventory, on computer disks, to all eligible AFSC 2A4X2 personnel. Members eligible for the survey consisted of the total assigned 3-, 5-, and 7-skill level populations, excluding the following: (1) hospitalized personnel; (2) personnel in transition for a permanent change of station; (3) personnel retiring within the time the inventories were administered to the

field; and (4) personnel in their jobs less than 6 weeks. Participants were selected from a computer-generated mailing list obtained from personnel data tapes maintained by AFPC, Randolph AFB TX.

Each individual completing the inventory first completed an identification and biographical information section and then indicated each task he or she currently performed on the job. After marking tasks performed, each individual rated those tasks marked on a 9-point scale showing relative time spent on that task, compared to other tasks performed. The ratings range from 1 (very small amount time spent) to 9 (very large amount time spent).

To determine relative time spent for each task, all incumbents' ratings are assumed to account for 100 percent of job time. The ratings are, therefore, summed and each individual task rating is divided by the total of all task ratings and subsequently multiplied by 100 to provide a relative percentage of time spent on each task.

Survey Sample

AFSC 2A4X2 personnel were selected to participate in this study to ensure an accurate representation across MAJCOMs and paygrades. Table 1 reflects the percentage, by MAJCOM, of assigned and sampled 2A4X2 personnel as of November 1997. As of May 1997, the 1,784 AD respondents in the final sample represent 67 percent of all assigned AD personnel. Also included within the sample was 421 AFRES personnel. Table 2 reflects the percentage distribution by paygrade groups. Overall, the survey sample is considered to be a satisfactory representation of the AFSC 2A4X2 career ladder population.

Task Factor Administration

Job descriptions alone do not provide sufficient data for making decisions about career ladder documents or training programs. Task factor information is needed for a complete analysis of the career ladder. To obtain the needed task factor data, selected senior AFSC 2A4X2 personnel (generally E-6 or E-7 craftsmen) also completed a second booklet for either training emphasis (TE) or task difficulty (TD). The TE and TD booklets were processed separately from the JIs. The information gained from these task factor data is used in various analyses and is a valuable part of the training decision process.

Training Emphasis (TE). TE is a rating of the amount of emphasis that should be placed on tasks in entry-level training. The 35 senior AFSC 2A4X2 noncommissioned officers who completed a TE booklet were asked to select tasks they felt required some sort of structured training for entry-level personnel and then indicate how much training emphasis these tasks should receive, from 1 (extremely low emphasis) to 9 (extremely high emphasis). Structured training is defined as training provided at resident technical schools, field training detachments, mobile training teams, formal on-the-job training (OJT), or any other organized training method.

TABLE 1

MAJCOM DISTRIBUTION OF 2A4X2 PERSONNEL

COMMAND	PERCENT OF ASSIGNED	PERCENT OF SAMPLE
AMC	42	46
AFRES	20	15
AFSOC	11	9
ACC	10	10
AETC	8	10
PACAF	4	4
USAFE	3	2
AFMC	2	2
OTHER	*	2

	ACTIVE DUTY	AIR FORCE RESERVES	TOTAL
Total Assigned:	1,784	441	2,225
Total Eligible/Surveyed:	1,652	421	2,073
Total in Survey Sample:	1,111	194	1,305
Percent of Assigned in Sample:	62%	44%	59%
Percent of Surveyed in Sample:	67%	46%	63%

* Less than 1 percent

NOTE: All data is as of May 1997

TABLE 2

PAYGRADE DISTRIBUTION OF SAMPLE

PAYGRADE	PERCENT OF ASSIGNED	PERCENT OF SAMPLE
E-1 to E-3	17	20
E-4	20	18
E-5	33	33
E-6	17	17
E-7	12	11
E-8	*	-

Interrater agreement for these raters was acceptable. The average TE rating was 1.00, with a standard deviation of 1.22. Any task with a TE rating of 2.22 or higher is considered to have a high TE.

Task Difficulty (TD). TD is an estimate of the amount of time needed to learn how to do each task satisfactorily. The 40 senior 2A4X2 NCOs who completed TD booklets were asked to rate the difficulty of each task using a 9-point scale (extremely low to extremely high). Interrater reliability was high. Ratings were standardized so tasks have an average difficulty of 5.00 and a standard deviation of 1.00. Any task with a TD rating of 6.00 or above is considered to be difficult to learn.

SPECIALTY JOBS
(Career Ladder Structure)

The first step in the analysis process is to identify the structure of the career ladder in terms of the jobs the respondents perform. The Comprehensive Occupational Data Analysis Programs (CODAP) assist by creating an individual job description for each respondent based on tasks performed and relative amount of time spent on tasks. The CODAP automated job clustering program then compares all individual job descriptions, locates the two descriptions with the most similar tasks and time spent ratings, and combines them to form a composite job description. In successive stages, CODAP either adds new members to this initial group, or forms new groups based on similarity of tasks and time spent ratings.

The basic group used in the hierarchical clustering process is the _Job_. When two or more jobs have a substantial degree of similarity in tasks performed and time spent performing tasks, they are grouped together and identified as a _Cluster_. The structure of the career ladder is then defined in terms of jobs and clusters of jobs.

As stated earlier, this OSR will focus primarily on members of AFSC 2A4X2, Aircraft Communication and Navigation Systems. However, the specialty job structure presented in this section of the report includes respondents from both of the surveyed AFSCs.

Overview of Specialty Jobs

Based on analysis of tasks performed and amount of time spent performing each task, 10 independent jobs (IJ) and 3 job clusters were identified. Figure 1 illustrates the jobs performed by AFSC 2A1X3/2A4X2 personnel.

A listing of these clusters and IJs is provided below. The stage (STG) number shown beside each title references computer-printed information, while the letter "N" represents the number of personnel in each group.

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CAREER LADDER STRUCTURE
(N=2,337)

Not Grouped 16%

Supv 9%

Other* 7%

General Avionics 58%

Shop Maint 10%
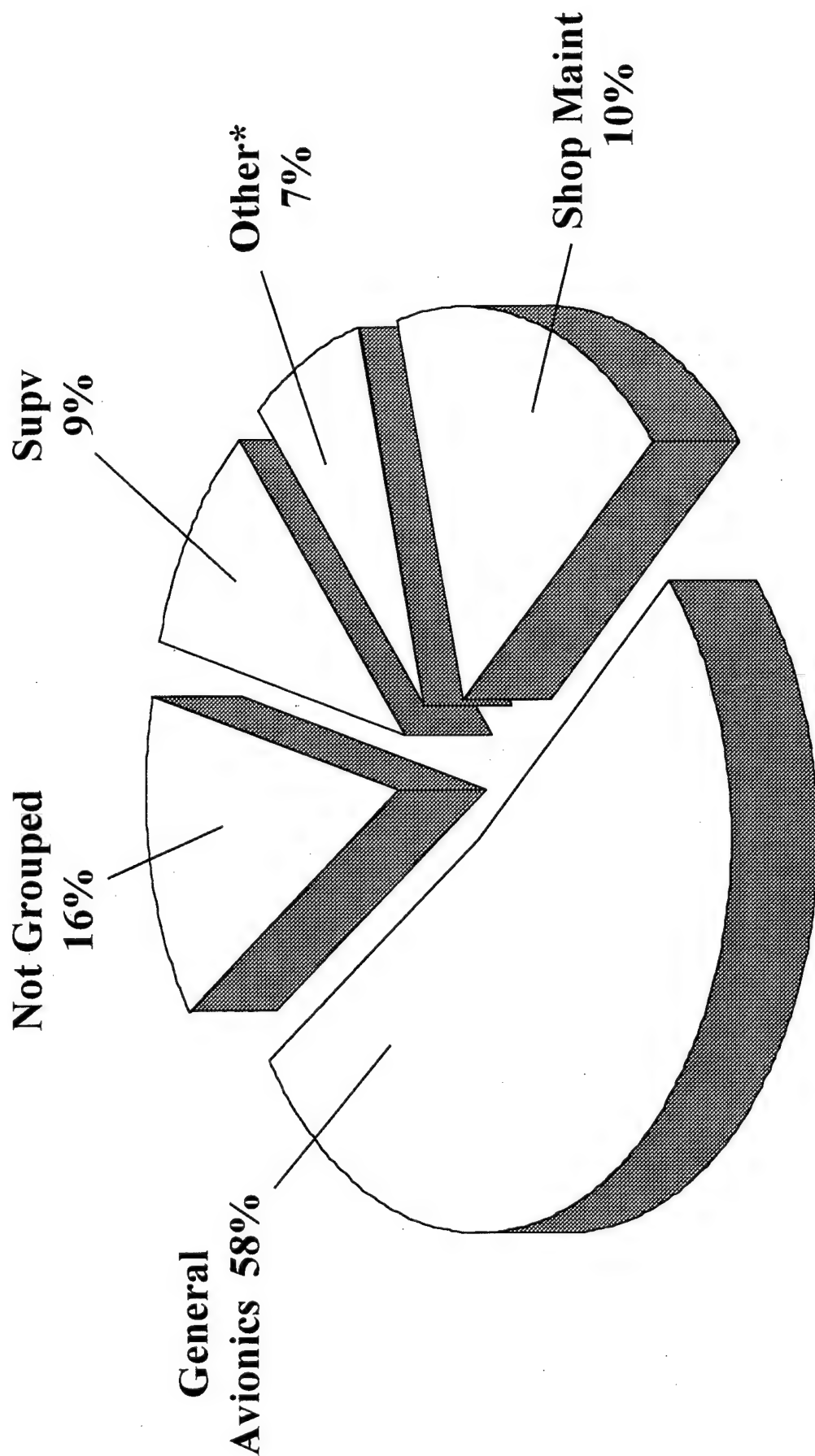
* Other includes: C-130 ADF Maintenance; RF MUF; Component Repair; FTD; TNG; Tool Crib Monitor; Mobility; QA Inspector; Maintenance Administrator

FIGURE 1

I. GENERAL AVIONICS CLUSTER (STG178, N=1,348)

II. SHOP COMMUNICATION AND NAVIGATION SYSTEMS CLUSTER (STG127, N=239)

III. C-130 ADF MAINTENANCE JOB (STG185, N=11)

IV. RF MULTIPLEXER (RF MUX) REPAIR JOB (STG200, N=16)

V. COMPONENT REPAIR JOB (STG306, N=24)

VI. MOBILITY JOB (STG249, N=22)

VII. SUPERVISION CLUSTER (STG51, N=210)

VIII. QA INSPECTOR JOB (STG135, N=27)

IX. MAINTENANCE ADMINISTRATOR JOB (STG148, N=13)

X. TOOL CRIB MONITOR JOB (STG214, N=15)

XI. FIELD TRAINING DETACHMENT (FTD) JOB (STG184, N=14)

XII. TRAINING JOB (STG172, N=14)

The respondents forming these groups account for 85 percent of the survey sample. The remaining 15 percent were performing tasks that did not group with any defined jobs. Job titles given by respondents which were representative of these personnel include Flight Examiner, Electronic Technician, Electronic Mechanic, Guidance and Control Technician, Training Scheduler, and Weapon System Coordinator.

Group Descriptions

The following paragraphs contain brief descriptions of the three clusters and four IJs identified in the career ladder structure analysis. Appendix A lists representative tasks performed by the identified job cluster and IJs. Table 3 displays time spent on duties, while Table 4 provides demographic information for each job discussed in this report.

TABLE 3

AVERAGE TIME SPENT ON DUTIES BY CAREER LADDER JOBS

DUTIES	GENERAL AVIONICS CLUSTER (STG178)	SHOP COMM & NAV SYS CLUSTER (STG127)	C-130 ADF MAINT JOB (STG185)	RF MUF JOB (STG200)	COMP REPAIR JOB (STG306)	MOBILITY JOB (STG249)
A MAINTAINING GENERAL AVIONICS SYSTEMS	14	12	21	17	14	10
B MAINTAINING AVIONICS SYSTEM MOCKUPS, TEST STATIONS, OR PECULIAR TEST EQUIPMENT	2	11	*	16	10	0
C MAINTAINING RADIO COMMUNICATIONS SYSTEMS	10	13	13	22	3	18
D MAINTAINING RADIO NAVIGATION SYSTEMS	19	15	30	0	5	0
E MAINTAINING RADAR NAVIGATION SYSTEMS, OTHER THAN NAVIGATION	5	2	2	0	2	0
F MAINTAINING RADAR SYSTEMS	9	13	4	0	44	0
G MAINTAINING IDENTIFICATION SYSTEMS	6	5	5	0	1	0
H MAINTAINING EMERGENCY SYSTEMS	2	1	2	0	*	0
I MAINTAINING INTERPHONE, PUBLIC ADDRESS (PA), OR WIRELESS SYSTEMS	4	3	5	3	*	*
J MAINTAINING STATION KEEPING EQUIPMENT (SKE)	2	3	4	0	*	0
K MAINTAINING DATA LINK CONTROL SYSTEMS	*	*	0	1	0	*
L MAINTAINING SELF-CONTAINED NAVIGATION SYSTEMS (SCNSs)	1	*	2	19	*	0
MAINTAINING INTEGRATED AVIONICS SYSTEMS	*	0	0	0	*	0
N PERFORMING GENERAL AIRCRAFT OR CROSS UTILIZATION (CUT) ACTIVITIES	9	*	5	*	1	1
O PERFORMING MOBILITY AND CONTINGENCY ACTIVITIES	2	1	*	1	1	44
P PERFORMING MAINTENANCE MANAGEMENT SYSTEM ACTIVITIES	5	7	3	9	6	0
Q PERFORMING MANAGEMENT & SUPERVISORY ACTIVITIES	4	5	*	4	4	7
R PERFORMING TRAINING ACTIVITIES	2	1	0	1	2	2
S PERFORMING GENERAL ADMIN AND TECHNICAL ORDER SYSTEM ACTIVITIES	2	2	2	2	2	9
T PERFORMING GENERAL SUPPLY & EQUIPMENT ACTIVITIES	2	5	*	4	4	8

* Denotes less than 1 percent members performing

NOTE: Columns may not add up to 100 percent due to rounding

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TABLE 3 (CONTINUED)

AVERAGE TIME SPENT ON DUTIES BY CAREER LADDER JOBS

DUTIES	SUPV CLUSTER (STG51)	MAINT ADMIN JOB (STG148)	TOOL CRIB MONITOR JOB (STG214)	QA INSPECTOR JOB (STG135)	FTD JOB (STG184)	TNG JOB (STG172)
A MAINTAINING GENERAL AVIONICS SYSTEMS	1	1	9	2		5
B MAINTAINING AVIONICS SYSTEM MOCKUPS, TEST STATIONS, OR PECULIAR TEST EQUIPMENT	*	0	1	*	11	*
C MAINTAINING RADIO COMMUNICATIONS SYSTEMS	1	1	*	*	1	1
D MAINTAINING RADIO NAVIGATION SYSTEMS	1	0	0	*	7	1
E MAINTAINING RADAR NAVIGATION SYSTEMS, OTHER THAN NAVIGATION	*	1	0	*	12	0
F MAINTAINING RADAR SYSTEMS	1	0	0	*	5	*
G MAINTAINING IDENTIFICATION SYSTEMS	*	0	0	*	5	0
H MAINTAINING EMERGENCY SYSTEMS	*	0	0	0	5	0
I MAINTAINING INTERPHONE, PUBLIC ADDRESS (PA), OR WIRELESS SYSTEMS	*	1	*	*	1	*
J MAINTAINING STATION KEEPING EQUIPMENT (SKE)	*	0	0	0	3	0
K MAINTAINING DATA LINK CONTROL SYSTEMS	*	0	0	0	1	0
L MAINTAINING SELF-CONTAINED NAVIGATION SYSTEMS (SCNSs)	*	0	0	*	*	0
MAINTAINING INTEGRATED AVIONICS SYSTEMS	*	0	0	0	0	0
N PERFORMING GENERAL AIRCRAFT OR CROSS UTILIZATION (CUT) ACTIVITIES	1	1	1	6	1	0
O PERFORMING MOBILITY AND CONTINGENCY ACTIVITIES	5	1	4	2	2	0
P PERFORMING MAINTENANCE MANAGEMENT SYSTEM ACTIVITIES	10	69	5	8	1	1
Q PERFORMING MANAGEMENT & SUPERVISORY ACTIVITIES	57	6	16	54	4	11
R PERFORMING TRAINING ACTIVITIES	8	0	*	6	9	71
S PERFORMING GENERAL ADMIN AND TECHNICAL ORDER SYSTEM ACTIVITIES	7	12	4	11	26	3
T PERFORMING GENERAL SUPPLY & EQUIPMENT ACTIVITIES	7	7	59	9	4	5

* Denotes less than 1 percent members performing

NOTE: Columns may not add up to 100 percent due to rounding

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TABLE 4

SELECTED BACKGROUND DATA FOR AFSC 2A1X3 AND 2A4X2 CAREER LADDER JOBS

	GENERAL AVIONICS CLUSTER (STG178)	SHOP COMM & NAV SYS CLUSTER (STG127)	C-130 ADF MAINT JOB (STG185)	RF MUX JOB (STG200)	COMP REPAIR JOB (STG306)	MOBILITY JOB (STG249)
NUMBER IN GROUP	1,348	239	11	16	24	22
PERCENT OF SAMPLE	58%	10%	LESS THAN 1%	1%	1%	1%
PERCENT IN CONUS	87%	87%	91%	100%	83%	91%
DAFSC DISTRIBUTION:						
2A133	1%	23%	0%	56%	8%	0%
2A153	22%	65%	36%	44%	71%	0%
2A173	14%	9%	0%	0%	13%	5%
2A432	15%	1%	55%	0%	0%	0%
2A452	38%	1%	9%	0%	8%	68%
2A472	10%	0%	0%	0%	0%	27%
COMPONENT STATUS						
ACTIVE DUTY	52%	81%	55%	100%	100%	73%
GUARD	25%	9%	45%	0%	0%	9%
RESERVES	22%	10%	0%	0%	0%	18%
PAYGRADE DISTRIBUTION						
E-1to E-3	14%	14%	54%	26%	8%	0%
E-4	21%	45%	45%	38%	46%	27%
E-5	29%	38%	0%	38%	33%	45%
E-6	19%	10%	0%	0%	13%	23%
E-7	8%	3%	0%	0%	0%	5%
E-8	0%	0%	0%	0%	0%	0%
AVERAGE MONTHS TAFMS (ACTIVE DUTY ONLY)	98	86	17	83	94	125
PERCENT IN FIRST ENLISTMENT (ACTIVE DUTY ONLY)	31%	32%	100%	31%	20%	0%
AVG NUMBER OF TASKS PERFORMED	237	160	115	109	188	60
PERCENT SUPERVISING	43%	31%	0%	50%	33%	32%

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TABLE 4 (CONTINUED)

SELECTED BACKGROUND DATA FOR AFSC 2A1X3 AND 2A4X2 CAREER LADDER JOBS

	SUPVR CLUSTER (STG051)	QA INSPECTOR JOB (STG135)	MAINT ADMIN JOB (STG148)	TOOL CRIB MONITOR JOB (STG214)	FTD JOB (STG184)	TRNG JOB (STG172)
NUMBER IN GROUP	210	27	13	15	14	14
PERCENT OF SAMPLE	9%	1%	1%	1%	1%	1%
PERCENT IN CONUS	82%	93%	77%	80%	100%	100%
DAFSC DISTRIBUTION:						
2A133	0%	0%	0%	0%	0%	0%
2A153	5%	7%	8%	0%	0%	36%
2A173	30%	26%	15%	0%	0%	7%
2A432	0%	0%	23%	13%	0%	0%
2A452	8%	15%	54%	87%	71%	50%
2A472	57%	52%	0%	0%	29%	7%
COMPONENT STATUS						
ACTIVE DUTY	89%	74%	92%	100%	100%	100%
GUARD	8%	11%	8%	0%	0%	0%
RESERVES	3%	15%	0%	0%	0%	0%
PAYGRADE DISTRIBUTION						
E-1to E-3	0%	0%	16%	14%	0%	0%
E-4	0%	0%	46%	33%	0%	21%
E-5	10%	22%	15%	53%	71%	50%
E-6	28%	33%	8%	0%	29%	29%
E-7	60%	41%	15%	0%	0%	0%
E-8	1%	4%	0%	0%	0%	0%
AVERAGE MONTHS TAFMS (ACTIVE DUTY ONLY)	207	190	103	113	150	138
PERCENT IN FIRST ENLISTMENT (ACTIVE DUTY ONLY)	0%	0%	33%	21%	2%	0%
AVG NUMBER OF TASKS PERFORMED	82	49	16	23	103	20
PERCENT SUPERVISING	90%	33%	15%	60%	43%	14%

I. GENERAL AVIONICS CLUSTER (STG178). Of the 1,348 members of this job, 63 percent hold an AFSC of 2A4X2 and 37 percent hold an AFSC of 2A1X3. They represent the largest job in the career field, comprising 58 percent of the survey sample. These members spend 19 percent of their time maintaining radio communication systems, 14 percent maintaining general avionics systems, and 10 percent maintaining radio communication systems (see Table 3). As part of their job, members operationally check and remove various communications and navigation systems and/or components. Performing an average of 237 tasks, representative tasks include:

- remove or install radio RTs, such as HF, UHF, SATCOM, or VHF-FM RTs
- apply external power to aircraft
- operationally check TACAN units
- operationally check radio systems
- remove or install TACAN RT units
- repair avionics system wiring or electrical connectors
- remove or install IFF RT units
- remove or install IFF control boxes

As shown in Table 4, this cluster is comprised of AD (52 percent), ANG (25 percent) and AFRES (22 percent) personnel. AD members of the General Avionics Cluster have an average of 98 months TAFMS, with 31 percent in their first enlistment. Sixty percent of all members hold a 5-skill level.

Within this cluster, most personnel perform routine general avionics tasks and call themselves "Communication Navigation Journeyman" or "Communication Navigation Craftsman". There are, however, several groups within the overall cluster that are somewhat distinct.

For example, a group of 16 personnel spend 10 percent of their time maintaining station keeping equipment, 25 percent of their time maintaining radio navigation systems and 12 percent of their time maintaining general avionics systems. These members perform an average of 133 tasks, the lowest average number of tasks performed by any job within this cluster. A second group of personnel spend more time on tasks involved with search weather maintenance. The third job within this cluster is the C-130/KC-135 Flightline Maintenance Job. These 20 personnel perform an average of 228 tasks. Thirty-five percent of their time is spent on maintaining radio navigation systems. An additional 26 percent is devoted to maintaining general avionics and radio communication systems (16 percent and 10 percent, respectively). The fourth group of 95 airmen performs general avionics systems maintenance; however, their job is distinctly different from the previous jobs, in that they spend 30 percent performing general aircraft or cross utilization training activities. The next job within this cluster is the Terrain Avoidance System Job. These 16 personnel spend 17 percent of their relative job time performing maintenance almost exclusively on terrain following/terrain avoidance radar. The sixth job within the cluster is the Flightline Supervisor Job. Performing an average of 202 tasks, these 39 members devote 22 percent of their relative time to performing management and supervisory activities. The final job

within the cluster is the Mockup Job. This job is distinctive from all the other jobs within the cluster in that it involves maintaining avionics system mockups, test stations, or peculiar test equipment.

II. SHOP COMMUNICATION AND NAVIGATION SYSTEMS CLUSTER (STG127). The Shop Communication and Navigation Systems Cluster is comprised primarily of AFSC 2A1X3 personnel (97 percent, see Table 4). Shop maintenance tasks typically include bench checking, adjusting and aligning, or repairing various communication and navigation system components. As seen in Table 3, 64 percent of their time is spent maintaining radio navigation systems (Duty D), maintaining radio communications systems (Duty C), maintaining radar systems (Duty F), maintaining general avionics systems (Duty A), and maintaining avionics system mockups, test stations, or peculiar test equipment (Duty B). Members perform an average of 160 tasks. Distinguishing tasks for this cluster include:

- bench check radio RTs, such as HF, UHF, SATCOM, or VHF-FM RTs
- adjust or align mockup LRUs
- bench check mockup LRUs
- isolate mockup LRU malfunctions
- adjust or align radio RTs, such as HF, UHF, SATCOM, or VHF-FM RTs
- perform preventive maintenance on test benches
- repair mockup LRUs
- adjust or align mockup show replaceable units (SRUs)

Eighty-one percent of the members in this cluster were AD, averaging 86 months TAFMS (see Table 4). Sixty-five percent of the AFSC 2A1X3 members in the cluster held a 5-skill level. The predominant paygrades for job members were E-4 and E-5, with 32 percent of the AD members in their first enlistment.

Two distinct jobs were noted within this cluster. Although personnel in the first job perform many core tasks of the Shop Communication and Navigation Cluster, they are distinguished by spending 12 percent of their relative job time on maintaining avionics systems mockups, test stations, or peculiar test equipment. Members of the second job are more heavily involved with bench checking operations.

III. C-130 ADF MAINTENANCE JOB (STG185). The 11 members of this job account for less than 1 percent of the survey sample. Seven members (64 percent) are in AFSC 2A4X2 and four members (36 percent) are in AFSC 2A1X3. Members of this job are primarily concerned with maintaining automatic direction finder (ADF) systems on C-130 aircraft. They

spend 30 percent of their time maintaining radio navigation systems, the highest of all groups identified (see Table 3). Members are about evenly split between AD (55 percent) and ANG (45 percent). Performing an average of 115 tasks, representative tasks of this job include:

- remove or install ADF receivers
- remove or install ADF electronic tuning units
- adjust or align ADF receivers
- adjust or align ADF electronic tuning units
- adjust or align ADF control boxes
- isolate ADF electronic tuning unit malfunctions
- isolate ADF control box malfunctions

Members of this small job are relatively young, with 55 percent holding a DAFSC of 2A432. All have a paygrade of E-4 and below.

IV. RF MULTIPLEXER (RF MUX) REPAIR JOB (STG200). The 16 members of this job are AD AFSC 2A1X3 personnel stationed at Offutt AFB. Members spend 22 percent of their relative job time maintaining radio communications systems and 16 percent maintaining avionics system mockups, test stations, or peculiar test equipment. However, one factor which distinguishes these personnel from other jobs is the amount of time spent maintaining self-contained navigation systems (19 percent), highest of all jobs identified. Members are also not maintaining radio navigation systems, radar systems, or emergency systems (see Table 3). Common job titles for these personnel are RF MUX Technician and RF MUX Apprentice. Incumbents perform an average of 109 tasks. Representative tasks of this job include:

- perform preventive maintenance inspections (PMIs) on peculiar test equipment for mockups
- bench check SATCOM modems
- prepare mockup test stations for operations
- adjust or align mockup LRUs
- bench check mockup LRUs
- remove or install mockup LRUs
- bench check airborne launch control system LRUs
- repair MILSTAR system LRUs

As shown in Table 4, 56 percent of the members in this job hold DAFSC 2A133 and 44 percent hold DAFSC 2A153. They average 83 months TAFMS, with 76 percent having paygrades E-4 and E-5. Thirty-one percent are in their first enlistment. All are assigned to ACC.

V. COMPONENT REPAIR JOB (STG306). Of the 24 airmen in the Component Repair Job, 22 (92 percent) are in AFSC 2A1X3. Eighty-three percent are assigned to AFSOC. They spend 44 percent of their time performing maintenance almost exclusively on terrain following or terrain avoidance radar. Another 24 percent of their relative job time is spent maintaining general avionics systems and maintaining avionics system mockups, test stations, or peculiar test equipment. Personnel within this job perform an average of 188 tasks. They are distinguished by the time they spend performing the following tasks:

- bench check mockup LRUs
- bench check mockup SRUs
- remove or install mockup LRUs
- adjust or align mockup LRUs
- adjust or align terrain following or terrain avoidance transmitters, other than for FLRs
- bench check terrain following or terrain avoidance transmitters, other than for FLRs
- bench check terrain following or terrain avoidance receivers, other than for for FLRs
- adjust or align terrain following or terrain avoidance antennas, other than for FLRs

These airmen average 94 months TAFMS, with 71 percent reporting they hold DAFSC 2A153. All members are AD and 20 percent are in their first enlistment.

VI. MOBILITY JOB (STG249). Of the 22 members of this job, 21 (95 percent) report being in AFSC 2A4X2. They spend 44 percent of their time performing mobility and contingency activities and 18 percent of their time maintaining radio communications systems (see Table 3). Seventy-three percent are AD, assigned to AMC. They perform 60 tasks on the average. Typical tasks include:

- pack or palletize mobility or contingency equipment for shipment or movement
- prepare equipment for deployments
- operate portable radios, such as field radios, during contingency exercises or operations
- set up or tear down shelters
- don or doff chemical warfare personal protective clothing
- erect tents

Sixty-eight percent of the members have DAFSC 2A452. AD members in this job have an average of 125 months TAFMS, and are predominantly in paygrades E-4 through E-6.

VII. SUPERVISION CLUSTER (STG051). The third largest number of respondents, comprising 9 percent of the total survey sample (see Table 4), comprise the Supervision Cluster. Seventy-three members (35 percent) are in AFSC 2A1X3 and 137 members (65 percent) are in AFSC 2A4X2. This cluster is distinguished by the amount of time spent performing management and supervisory activities and performing maintenance management system activities (57 percent, and 10 percent respectively) (see Table 3). On the average, these members perform 82 tasks. Distinguishing tasks for this cluster include:

- supervise military personnel
- conduct supervisory performance feedback sessions
- counsel subordinates concerning personal matters
- participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting
- evaluate personnel for compliance with military standards
- inspect personnel for compliance with military standards
- determine or establish work assignments or priorities
- write performance reports or supervisory appraisals

Within this cluster, most personnel are performing supervisory tasks and call themselves "Production Supervisor" or "Production Superintendent". There are, however, three jobs within the overall cluster that are somewhat distinct. For example, a group of 20 personnel are responsible for the control and expeditious assignment, coordination, and completion of maintenance activities. Common job titles for these personnel are Expediter and Production Expediter. The 138 personnel in the second job distinguish themselves from the rest of the cluster by performing only about half the number of tasks performed by other members within the cluster. The final job within this cluster is the Superintendent Job. Personnel in this job distinguish themselves from the previous jobs by the amount of time spent performing management and supervisory activities. Common job titles for these personnel are Superintendent, Production Superintendent, and Avionics Flight Chief.

As shown in Table 4, AD members of this cluster have an average of 207 months TAFMS, with none in their first enlistment. Thirty percent hold the 2A173 DAFSC and 57 percent hold a DAFSC of 2A472.

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VIII. QA INSPECTOR JOB (STG135). Of the 27 airmen in this job, 18 (67 percent) report being in AFSC 2A4X2 and 9 (33 percent) report being in AFSC 2A1X3. These personnel have a distinctly different job from the personnel in the previous cluster because of the concentration of tasks pertaining to inspecting and evaluating functions. This job is narrow in scope, with members averaging 49 tasks. Distinguishing tasks for this cluster include:

- write inspection reports
- conduct safety inspections of equipment or facilities
- evaluate job hazards or compliance with AFOSH program
- conduct self-inspections or self-assessments
- investigate accidents or incidents
- evaluate safety or security programs
- evaluate accident or incident reports

Members of this job primarily hold a 7-skill level. AD members average 190 months TAFMS. In addition, no personnel are in their first enlistment. Seventy-four percent are AD and are in paygrades E-6 and E-7.

IX. MAINTENANCE ADMINISTRATOR JOB (STG148). Of the 13 airmen in this job, 10 (77 percent) report being in AFSC 2A4X2 and 3 members (23 percent) report being in AFSC 2A1X3. Members of this job perform maintenance management system activities as their primary responsibility, which account for 69 percent of their relative time (see Table 3). Their job is very limited in scope, with an average of only 16 tasks performed, the lowest of all jobs. Distinguishing tasks for this cluster include:

- access CAMS or G081 menus and data screens
- open or close CAMS or G081
- create aircraft or support equipment maintenance discrepancies in CAMS or G081
- change CAMS or G081 data
- perform CAMS or G081 inquiries for scheduled aircraft discrepancies
- perform CAMS or G081 interface with base supply

The predominant paygrade for these members is E-4. Ninety-two percent are AD, with the remaining 8 percent in ANG units. Fifty-four percent hold a DAFSC of 2A452.

X. TOOL CRIB MONITOR JOB (STG214). Members of this job are comprised only of AD AFSC 2A4X2 personnel. They spend 59 percent of their relative job time performing general supply and equipment activities (see Table 3). These 15 airmen are primarily responsible for inventorying and accounting for the parts and tools used by maintenance personnel. They perform an average of 23 tasks, indicating a very narrow job. Representative tasks include:

- evaluate serviceability of equipment, tools, parts, or supplies
- inspect consolidated tool kits (CTKs)
- inventory equipment, tools, parts, or supplies
- store equipment, tools, parts, or supplies
- issue or log turn-ins of equipment, tools, parts, or supplies

Eighty-seven percent hold a DAFSC of 2A452. Incumbents average 113 months TAFMS and 21 percent are in their first enlistment.

XI. FIELD TRAINING DETACHMENT (FTD) JOB (STG184). Members in this job are also comprised only of AD AFSC 2A4X2 personnel. They spend 26 percent of their time providing hands-on training covering the varied communication and navigation systems. This group of instructors performs an average of 103 tasks. Representative tasks of this job include:

- personalize lesson plans
- operationally check radio or radar altimeter systems
- maintain training records or files
- operationally check interphone systems
- remove or install radio RTs, such as HF, UHF, SATCOM, or VHF-FM RTs
- administer or score tests

Seventy-one percent of personnel in this job hold the 2A452 DAFSC. The average time in service is 150 months. Only 2 percent of the personnel are in their first enlistment.

XII. TRAINING JOB (STG172). Eight of the 14 members of this job (57 percent) report being in AFSC 2A4X2 and 6 members (43 percent) are in AFSC 2A1X3. These personnel represent 1 percent of the survey sample. All are AD entry-level course instructors at Keesler AFB. They basically perform training, management, and staff activities. They perform an average of only 20 tasks. Some typical tasks performed are:

- conduct formal course training
- maintain training records
- administer or score tests
- counsel trainees on training progress
- develop training materials or aids
- write test questions

Members of this job primarily hold a 5-skill level, and have a predominant paygrade of E-5 (see Table 4). They average 138 months TAFMS. In addition, no personnel are in their first enlistment, while 14 percent indicate they supervise other personnel.

JOB STRUCTURE ANALYSIS SUMMARY

As seen in Table 5 below, personnel in both AFSC 2A1X3 and 2A4X2 clearly perform several distinct jobs, but they also are seen performing many of the same jobs. Jobs that are comprised primarily of AFSC 2A1X3 personnel include: Shop Communication and Navigation Systems Cluster, Component Repair Job, and the RF MUX Job. Jobs that are comprised primarily of AFSC 2A4X2 personnel include: Mobility Job, Tool Crib Job, and the FTD Job. Six jobs were comprised of both AFSCs, with all having higher percentages of AFSC 2A4X2 personnel. Career field managers should carefully look at these utilization patterns to discern their impact on possible classification changes in the future.

TABLE 5

DISTRIBUTION OF CAREER LADDER MEMBERS
WITHIN JOB GROUPS
(PERCENT MEMBERS RESPONDING)

JOB TITLE	AFSC 2A1X3	AFSC 2A4X2
Shop Communications and Navigation Systems Cluster	97	2
Component Repair Job	92	8
RF MUX Job	100	0
C-130 ADF Maintenance Job	36	64
General Avionics Cluster	37	63
Training Job	43	57
QA Inspector Job	33	67
Maintenance Administration Job	23	77
Supervision Job	35	65
Mobility Job	5	95
Tool Crib Job	0	100
FTD Job	0	100

Comparison to Previous Study

The results of the specialty job analysis were compared to those of the last Aircraft Communication and Navigation Systems and Communication and Navigation Systems OSR published in 1994. As shown in Table 6, 11 jobs in the current study were also identified in the 1994 study. One job, however, RF MUX Repair, was identified in this survey but not identified in the 1994 survey.

ANALYSIS OF DAFSC GROUPS

An analysis of DAFSC groups, in conjunction with analysis of the career ladder structure, is an important part of each occupational survey. DAFSC analysis examines differences in tasks performed between skill-level members. This information may then be used to evaluate how well career ladder documents, such as AFMAN 36-2108 *Specialty Descriptions*, reflect what career ladder personnel are doing in the field.

TABLE 6

SPECIALTY JOB COMPARISONS BETWEEN CURRENT AND PREVIOUS SURVEYS

CURRENT 2A4X2 OSR	1994 2A4X2 OSR
General Avionics Cluster C-130 ADF Maintenance Job	Flightline Communication and Navigation Systems Cluster
Shop Communication and Navigation Systems Cluster Component Repair Job	Shop Communication and Navigation Systems Cluster Bench Check Monitor Job
Supervision Cluster Field Training Detachment (FTD) Job Training Job Mobility Job QA Inspector Job Tool Crib Job	Staff Personnel Cluster
Not identified	Airlift Control Element Job
Maintenance Administrator Job	Maintenance Administration Job
Not identified	Resource Management Job
RF Multiplexer Job	Not Identified

The distribution of AFSC 2A4X2 skill-level groups across career ladder jobs is displayed in Table 7. Seventy-one percent of AD 3-skill level personnel and 90 percent of AFRES 5-skill level personnel are located in the General Avionics Cluster. In addition, 68 percent of AFRES 7-skill level personnel are located in this General Avionics Cluster as well. Basically, the personnel in the General Avionics Cluster represent the core job of AFSC 2A4X2. The only other item of note is AD 7-skill level members have a higher representation in the Supervisor Cluster.

<u>Skill-Level Descriptions</u>

<u>2A4X2 AD</u>

DAFSC 2A432. The 281 AD 3-skill level personnel, representing 19 percent of the AD DAFSC 2A4X2 survey sample, perform an average of 148 tasks. Seventy-one percent of 3-skill level personnel perform in the General Avionics Cluster (see Table 7). Table 8 displays the relative time spent on each duty across the skill-level groups. The focus of the 3-skill level job is shown by figures in Table 9, which lists representative tasks performed. Most tasks listed relate to Duty A (Maintaining General Avionics Systems).

DAFSC 2A452. The 555 AD 5-skill level personnel, representing 50 percent of the AD DAFSC 2A4X2 survey sample, perform an average of 166 tasks. Seventy-two percent of 5-skill level personnel work in the General Avionics Cluster (see Table 7). Table 10 shows that, like their junior counterparts, 5-skill level personnel perform primarily technical tasks. Like the 3-skill level job, most tasks listed also relate to Duty A (Maintaining General Avionics Systems). What distinguishes 5-skill level personnel from 3-skill level personnel is that a higher percentage of 5-skill level personnel perform some basic supervisory functions (see Table 11).

DAFSC 2A472. The 275 AD 7-skill level personnel, representing 25 percent of the AD DAFSC 2A4X2 survey sample, perform an average of 111 tasks. Forty-one percent of 7-skill level personnel are grouped in the Supervisor Cluster (see Table 7). Table 8 shows they spend more of their time performing management and supervisory activities than any other duty. Table 12 illustrates this high concentration. Seven-skill level personnel distinguish themselves from 5-skill level personnel by the numbers performing supervisory tasks, such as conducting general meetings, such as staff meetings, briefings, conferences, or workshops; interpreting policies, directives, or procedures for subordinates, developing or establishing work schedules, and evaluating work schedules (see Table 13).

TABLE 7

DISTRIBUTION OF SKILL-LEVEL MEMBERS
ACROSS 2A4X2 CAREER LADDER JOBS

| | ACTIVE DUTY | | | | AFRES | | |
SPECIALTY JOBS	DAFSC 2A432 (N=281)	DAFSC 2A452 (N=555)	DAFSC 2A472 (N=275)	DAFSC 2A452 (N=121)	DAFSC 2A472 (N=72)
I. General Avionics Cluster	71	72	29	90	68
II. Shop Communication and Navigation Systems Cluster	1	*	0	0	1
III. C-130 ADF Maintenance Job	2	*	0	0	0
IV. RF Multiplexer Job	0	0	0	0	0
V. Component Repair Job	0	*	0	0	0
VI. Mobility Job	0	3	1	0	6
VII. Supervision Cluster	0	3	41	0	10
VIII. QA Inspector Job	0	1	5	0	1
IX. Maintenance Administrator Job	1	1	0	0	0
X. Tool Crib Monitor Job	1	2	0	0	0
XI. Field Training Detachment (FTD) Job	0	2	2	0	0
XII. Training Job	0	4	7	0	10
VIII. NOT GROUPED	24	12	15	10	4

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TABLE 8

TIME SPENT ON DUTIES BY MEMBERS OF SKILL-LEVEL GROUPS
(RELATIVE PERCENT OF JOB TIME)

DUTIES	ACTIVE DUTY			AFRES	
	DAFSC 2A432 (N=281)	DAFSC 2A452 (N=555)	DAFSC 2A472 (N=275)	DAFSC 2A452 (N=121)	DAFSC 2A472 (N=72)
A MAINTAINING GENERAL AVIONICS SYSTEMS	18	13	6	17	12
B MAINTAINING AVIONICS SYSTEM MOCKUPS, TEST STATIONS, OR PECULIAR TEST EQUIPMENT	*	*	*	*	*
C MAINTAINING RADIO COMMUNICATIONS SYSTEMS	12	8	4	11	10
D MAINTAINING RADIO NAVIGATION SYSTEMS	20	13	5	21	17
E MAINTAINING RADAR NAVIGATION SYSTEMS, OTHER THAN NAVIGATION	5	4	1	5	3
F MAINTAINING RADAR SYSTEMS	7	6	2	9	6
G MAINTAINING IDENTIFICATION SYSTEMS	6	4	2	2	5
H MAINTAINING EMERGENCY SYSTEMS	2	2	1	3	2
I MAINTAINING INTERPHONE, PUBLIC ADDRESS (PA), OR WIRELESS SYSTEMS	4	3	4	5	3
J MAINTAINING STATION KEEPING EQUIPMENT (SKE)	2	3	1	2	1
K MAINTAINING DATA LINK CONTROL SYSTEMS	*	*	*	*	*
L MAINTAINING SELF-CONTAINED NAVIGATION SYSTEMS (SCNSs)	1	*	*	*	8
M MAINTAINING INTEGRATED AVIONICS SYSTEMS	*	*	*	*	*
N PERFORMING GENERAL AIRCRAFT OR CROSS UTILIZATION (CUT) ACTIVITIES	11	11	5	10	7
O PERFORMING MOBILITY AND CONTINGENCY ACTIVITIES	1	4	7	1	6
P PERFORMING MAINTENANCE MANAGEMENT SYSTEM ACTIVITIES	7	8	8	4	4
Q PERFORMING MANAGEMENT & SUPERVISORY ACTIVITIES	*	8	39	1	13
R PERFORMING TRAINING ACTIVITIES	*	5	7	1	4
S PERFORMING GENERAL ADMIN AND TECHNICAL ORDER SYSTEM ACTIVITIES	1	4	6	1	3
T PERFORMING GENERAL SUPPLY & EQUIPMENT ACTIVITIES	2	5	5	2	2

* Denotes less than 1 percent

NOTE: Columns may not add up to 100 percent due to rounding

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TABLE 9

REPRESENTATIVE TASKS PERFORMED BY ACTIVE DUTY 2A432 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=281)
C127	Remove or install radio RTs, such as HF, UHF, SATCOM, or VHF-FM RTs	94
A2	Apply external power to aircraft	92
A20	Perform general soldering	91
C113	Operationally check radio systems	88
D282	Remove or install TACAN RT units	87
D261	Operationally check TACAN systems	86
A44	Set up flightline maintenance stands	86
A28	Perform safety wiring on avionics systems equipment	86
C114	Operationally check secure voice systems	83
N887	Operate powered AGE, such as power units, heaters, or light carts	82
D263	Operationally check VOR systems	84
I720	Operationally check interphone systems	81
A47	Use illustrated parts breakdown (IPB) to order parts	81
A18	Open or close radomes	81
G645	Remove or install IFF control boxes	81
G649	Remove or install IFF RT units	79
A43	Repair avionics system wiring or electrical connectors	79
C120	Remove or install radio control units	79
N935	Walk wings or tails during aircraft towing operations	78
D289	Remove or install VOR receivers	77
D255	Operationally check glidescope receiver systems	76
D258	Operationally check marker beacon systems	76
I725	Remove or install interphone system LRUs	76
A46	Trace signals through circuits using schematics or wiring diagrams	75
A34	Remove or install avionics system wiring, coaxial cables, or triaxial cables	75
D257	Operationally check localizer receiver systems	74
C138	Remove or install secure voice line system LRUs	74
A6	Clean facilities	74
A32	Remove or install aircraft access plates or panels	73

TABLE 10

REPRESENTATIVE TASKS PERFORMED BY ACTIVE DUTY 2A452 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=555)
C127	Remove or install radio RTs, such as HF, UHF, SATCOM, or VHF-FM RTs	81
A20	Perform general soldering	81
A2	Apply external power to aircraft	79
C113	Operationally check radio systems	78
A47	Use illustrated parts breakdown (IPB) to order parts	77
D261	Operationally check TACAN systems	76
D282	Remove or install TACAN RT units	75
A43	Repair avionics systems wiring, or electrical connectors	75
A44	Set up flightline maintenance stands	75
I720	Operationally check interphone systems	74
A46	Trace signals through circuits using schematics or wiring diagrams	74
G649	Remove or install IFF RT units	74
C120	Remove or install radio control units	73
N887	Operate powered AGE, such as power units, heaters, or light carts	73
D257	Operationally check localizer receiver systems	72
A13	Isolate faulty avionics system wiring, coaxial cables, or triaxial cables	71
A28	Perform safety wiring on avionics systems equipment	71
D263	Operationally check VOR systems	71
D255	Operationally check glideslope receiver systems	71
A32	Remove or install aircraft access plates or panels	71
A6	Clean facilities	70

TABLE 11

TASKS WHICH BEST DIFFERENTIATE BETWEEN
ACTIVE DUTY DAFSC 2A432 AND DAFSC 2A452 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		DAFSC 2A432 (N=281)	DAFSC 2A452 (N=555)	DIFFERENCE
Q1107	Supervise military personnel	2	46	-44
Q1044	Counsel subordinates concerning personal matters	2	44	-42
R1133	Maintain training records or files	9	50	-41
R1120	Counsel trainees on training progress	2	43	-41
R1131	Evaluate progress of trainees	2	42	-40
R1127	Evaluate personnel to determine training needs	2	41	-39
Q1040	Conduct supervisory performance feedback sessions	71	39	-38
Q1110	Write performance reports or supervisory appraisals	*	37	-37
Q1048	Determine or establish work assignments or priorities	1	36	-35

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TABLE 12

REPRESENTATIVE TASKS PERFORMED BY ACTIVE DUTY 2A472 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=275)
Q1107	Supervise military personnel	74
Q1040	Conduct supervisory performance feedback sessions	71
Q1044	Counsel subordinates concerning personal matters	69
Q1077	Evaluate personnel for compliance with performance standards	67
Q1094	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	67
Q1110	Write performance reports or supervisory appraisals	66
Q1048	Determine or establish work assignments or priorities	65
Q1112	Write recommendations for awards or decorations	64
Q1090	Inspect personnel for compliance with military standards	63
Q1091	Interpret policies, directives, or procedures for subordinates	60
R1127	Evaluate personnel to determine training needs	59
Q1054	Develop or establish work schedules	56
Q1065	Establish performance standards for subordinates	55
Q1080	Evaluate work schedules	54
Q1078	Evaluate personnel for promotion, demotion, reclassification, or special awards	53
Q1042	Conduct supervisory orientation for newly assigned personnel	53
Q1105	Schedule work assignments or priorities	52
Q1037	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	52
P1021	Open or close CAMS or G081	52
P1010	Access core automated maintenance system (CAMS) or G081 menus and data screens	51
Q1038	Maintain training records or files	50
A2	Apply external power to aircraft	50
Q1034	Assign personnel to work areas or duty positions	50
Q1038	Conduct self-inspections or self-assessments	50

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TABLE 13

TASKS WHICH BEST DIFFERENTIATE BETWEEN
ACTIVE DUTY DAFSC 2A452 AND DAFSC 2A472 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		DAFSC 2A452 (N=555)	DAFSC 2A472 (N=275)	DIFFERENCE
D282	Remove or install TACAN RT units	75	32	43
D261	Operationally check TACAN systems	76	34	42
G649	Remove or install IFF RT units	74	32	42
A28	Perform safety wiring on avionics systems equipment	71	29	41
G645	Remove or install IFF control boxes	71	29	41
N870	Connect or disconnect static grounds	67	26	41
A43	Repair avionics system wiring or electrical connectors	75	34	41
I720	Operationally check interphone systems	74	33	41
C127	Remove or install radio RTs, such as HF, UHF, SATCOM, or VHF-FM RTs	81	41	40
Q1037	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	11	52	-41
Q1103	Schedule personnel for temporary duty (TDY) assignments, leaves, or passes	12	52	-40
Q665	Evaluate work schedules	15	54	-38
Q1094	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting.	28	67	-39
Q674	Interpret policies, directives, or procedures for subordinates	23	60	-37
Q1054	Develop or establish work schedules	20	56	-36
Q1077	Evaluate personnel for compliance with performance standards	32	67	-35
Q663	Evaluate personnel for promotion, demotion, reclassification, or special awards	19	53	-34

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DAFSC 2A452. The 121 5-skill level AFRES personnel, representing 62 percent of the AFRES survey sample, perform an average of 201 tasks. The 5-skill level ANG personnel surveyed were identified as members in only one specialty job (General Avionics Cluster) (see Table 7). Although their time spent is in all duties identified by the JI, the highest concentration is in Maintaining Radio Navigation Systems (see Table 8). Representative tasks performed are listed in Table 14.

DAFSC 2A472. The 72 7-skill level AFRES personnel, representing 37 percent of the AFRES survey sample, perform an average of 167 tasks, the most of any skill group surveyed. Sixty-eight percent of 7-skill level AFRES personnel belong, like their 5-skill level counterparts, to the General Avionics Cluster (see Table 7). Seven-skill level AFRES personnel represent many of the supervisors in the General Avionics Cluster, with 13 percent of their time spent performing supervisory and managerial activities (see Table 8). Representative tasks of 7-skill level AFRES personnel are shown in Table 15. Table 16 shows those tasks that best differentiate the 5- and 7-skill levels. As expected, the key difference is a shift toward supervisory functions.

Summary

For AD personnel, 3- and 5-skill level airmen perform many tasks in common and both groups spend the majority of their relative job time on technical functions. Five-skill level personnel do perform some supervisory tasks. The 7-skill level personnel perform all aspects of a 5-skill level job, in addition to being introduced to many more supervisory functions. There are no 9-skill level personnel in the survey.

AFRES personnel reflect the same trends as do the AD personnel. The difference is 5-skill level AFRES personnel are concentrated only in one job, the General Avionics Cluster. The 5-skill level AFRES personnel are doing technical work, while the 7-skill level AFRES personnel, in addition to performing all phases of the 5-skill level position, perform more tasks concerned with supervision, training and management. Table 17 shows a comparison between AD and AFRES AFSC 2A4X2 personnel.

TRAINING ANALYSIS

Occupational surveys provide information that can be used to assist in the development of training programs relevant to needs of personnel in their first enlistment. Primary factors used in this study to evaluate entry-level training, jobs performed by personnel during their first enlistment (1-48 months TAFMS), and relative task difficulty (TD) ratings. As mentioned earlier, training emphasis (TE) ratings are not available for this study.

TABLE 14

REPRESENTATIVE TASKS PERFORMED BY AFRES 2A452 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=72)
A2	Apply external power to aircraft	95
C127	Remove or install RTs, such as HF, UHF, SATCOM, or VHF-FM, RTs	95
G645	Remove or install IFF control boxes	92
D261	Operationally check TACAN systems	91
A32	Remove or install aircraft access plates or panels	91
I720	Operationally check interphones systems	90
D279	Remove or install TACAN control boxes	89
A20	Perform general soldering	89
G649	Remove or install IFF RT units	89
A44	Set up flightline maintenance stands	88
A28	Perform safety wiring on avionics systems equipment	88
C113	Operationally check radio systems	88
C120	Remove or install radio control units	87
A32	Remove or install aircraft access plates or panels	85
D263	Operationally check VOR systems	85
D258	Operationally check marker beacon systems	85
A43	Repair avionics system wiring or electrical connectors	84
A34	Remove or install avionics system wiring, coaxial cables, or triaxial cables	83
G637	Operationally check IFF systems	83
A47	Use illustrated parts breakdown (IPB) to order parts	83
D289	Remove or install VOR receivers	83
I725	Remove or install interphone system LRUs	82
A36	Remove or install common hardware, such as switches, knobs, or fireplaces	82
A18	Open or close radomes	82
D255	Operationally check glidescope receiver systems	82
A35	Remove or install blade antennas	81
D257	Operationally check localizer receiver systems	81
A45	Test avionics system wiring, coaxial cables, or triaxial cables	81
D290	Remove or install VOR/ILS control boxes	81
C115	Preset frequencies in radio control units	80

TABLE 15

REPRESENTATIVE TASKS PERFORMED BY AFRES 2A472 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=72)
C127	Remove or install radio RTs, such as HF, UHF, SATCOM, or VHF-FM, RTs	82
A47	Use illustrated parts breakdown (IPB) to order parts	79
C120	Remove or install radio control units	79
A46	Trace signals through circuits using schematics or wiring diagrams	78
A2	Apply external power to aircraft	76
D261	Operationally check TACAN systems	76
I720	Operationally check interphone systems	76
C113	Operationally check radio systems	75
A45	Test avionics system wiring, coaxial cables, or triaxial cables	75
A36	Remove or install common hardware, such as switches, knobs, or faceplates	74
A44	Set up flightline maintenance stands	74
C115	Preset frequencies in radio control units	74
D257	Operationally check localizer receiver systems	74
D255	Operationally check glideslope receiver systems	73
A20	Perform general soldering	71
C109	Operate associated systems while checking radio systems	71
A35	Remove or install blade antennas	71
G645	Remove or install IFF control boxes	71
C114	Operationally check secure voice systems	69
C109	Operate associated systems while checking radio systems	69
A13	Isolate faulty avionics system wiring, coaxial cables, or triaxial cables	69
D258	Operationally check marker beacon systems	69
D263	Operationally check VOR systems	69
D257	Operationally check localizer receiver systems	68
C108	Load Have Quick	67
A28	Perform safety wiring on avionics systems equipment	67
D253	Operationally check ADF systems	67
G649	Remove or install IFF RT units	67
A34	Remove or install avionics system wiring, coaxial cables, or triaxial cables	67

TABLE 16

TASKS WHICH BEST DIFFERENTIATE BETWEEN
AFRES DAFSC 2A452 AND 2A472 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		DAFSC 2A452 (N=121)	DAFSC 2A472 (N=72)	DIFFERENCE
I721	Operationally check PA systems	76	42	34
I720	Operationally check interphone systems	90	64	26
H684	Operationally check ELTs	63	38	25
E361	Operationally check radio or radar altimeter systems	79	56	23
G649	Remove or install IFF RT units	89	67	22
I725	Remove or install interphone system LRUs	82	60	22
I718	Isolate installed PA system malfunctions	56	35	21
A32	Remove or install aircraft access plates or panels	85	64	21
Q1107	Supervise military personnel	16	57	-41
Q1040	Conduct supervisory performance feedback sessions	5	44	-39
Q1090	Inspect personnel for compliance with military standards	8	40	-32
Q1094	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	9	38	-39
Q1042	Conduct supervisory orientations for newly assigned personnel	8	35	-37
Q1054	Develop or establish work schedules	4	31	-27
R1131	Evaluate progress of trainees	20	46	-26

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TABLE 17

TASKS WHICH BEST DIFFERENTIATE BETWEEN
ACTIVE DUTY AND AFRES DAFSC 2A4X2 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		ACTIVE DUTY DAFSC 2A4X2 (N=1,111)	AFRES DAFSC 2A4X2 (N=194)	DIFFERENCE
Q1111	Write performance reports or supervisory appraisals	35	14	21
N936	Wash aircraft	30	11	19
P1018	Defer aircraft maintenance discrepancies in CAMS or G081	44	25	19
Q1112	Write recommendations for awards or decorations	31	13	18
P1029	Schedule aircraft maintenance discrepancies in CAMS or G081	32	14	18
F521	Remove or install color weather radar control boxes	25	55	-30
F526	Remove or install color weather radar RTs	27	56	-29
D279	Remove or install TACAN control boxes	56	84	-28
F524	Remove or install color weather radar indicators	25	53	-28
C121	Remove or install radio coupler controls or accessory units	38	63	-25
F522	Remove or install color weather radar display interface control units	38	63	-25
D290	Remove or install VOR/ILS control boxes	52	77	-25
F523	Remove or install color weather radar display interface control units	19	44	-25

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First-Enlistment Personnel

In this study, there are 308 members in their first enlistment (1-48 months TAFMS) representing 21 percent of the survey sample. These personnel work primarily in the General Avionics Cluster (see Figure 2). As displayed in Table 18, approximately 94 percent of their time is devoted to technical tasks. Table 19 illustrates the tasks performed by first-enlistment personnel. The majority of tasks involve maintaining radio navigation systems. The test equipment and flightline test sets that are maintained by at least 20 percent of AD first-job or first-enlistment personnel is shown in Table 20.

Training Emphasis (TE) and Task Difficulty (TD) Data

TE and TD data are secondary factors that can help technical school personnel decide which entry-level training tasks to emphasize. These ratings, based on the judgments of senior career ladder NCOs at operational units, provide a rank-ordering of those tasks considered important for first-enlistment airmen training (TE), and a measure of the difficulty of those tasks (TD). When combined with data on the percentages of first-enlistment personnel performing tasks, comparisons can be made to determine if training adjustments are necessary. For example, tasks receiving high ratings on both task factors (TE and TD), accompanied by moderate to high percentages of first-enlistment personnel performing, may warrant resident training. Those tasks receiving high task factor ratings, but low percentages performing, may be more appropriately planned for OJT programs. Low task factor ratings may highlight tasks best omitted from training for first-enlistment personnel. These decisions must be weighed against percentages of personnel the tasks, command concerns, and criticality of the tasks.

To help training personnel focus on tasks that are most appropriate for entry-level training, an additional factor, the Automated Training Indicator (ATI), was assigned to each task in the inventory. A computer program considered percent first-enlistment members performing, TE and TD ratings, and the Course Training Decision Logic Table found in AETCI 36-2601, Atch 1, and assigned an ATI value to each task corresponding to the 18 training decisions on the table. The decision table and explanation of ATIs precede the listing of tasks in descending order of ATIs in the TRAINING EXTRACT. Training personnel should focus on tasks with an ATI of 18 that suggests these tasks should be in the entry-level course.

Tasks having the highest TE ratings are listed in Table 21. Included for each task are the percentage of the first-job and first-enlistment personnel performing and the TD rating. Tasks with the highest TE deal with maintaining general avionics systems.

Table 22 lists the tasks having the highest TD ratings. The percentages of first-job, first-enlistment, 5-, and 7-skill level personnel performing, and the TE ratings are also included for each task. Most tasks with high TD ratings deal with Duty F, Maintaining Radar Systems, and are performed by very few to none of the respondents.

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JOBS PERFORMED BY FIRST- ENLISTMENT
AFSC 2A4X2 PERSONNEL

Shop Comm & Nav Sys 1%

C-130 ADF Maint 2%

Tool Crib Monitor 2%

Not Grouped 24%

Gen Avionics 71%

FIGURE 2

37
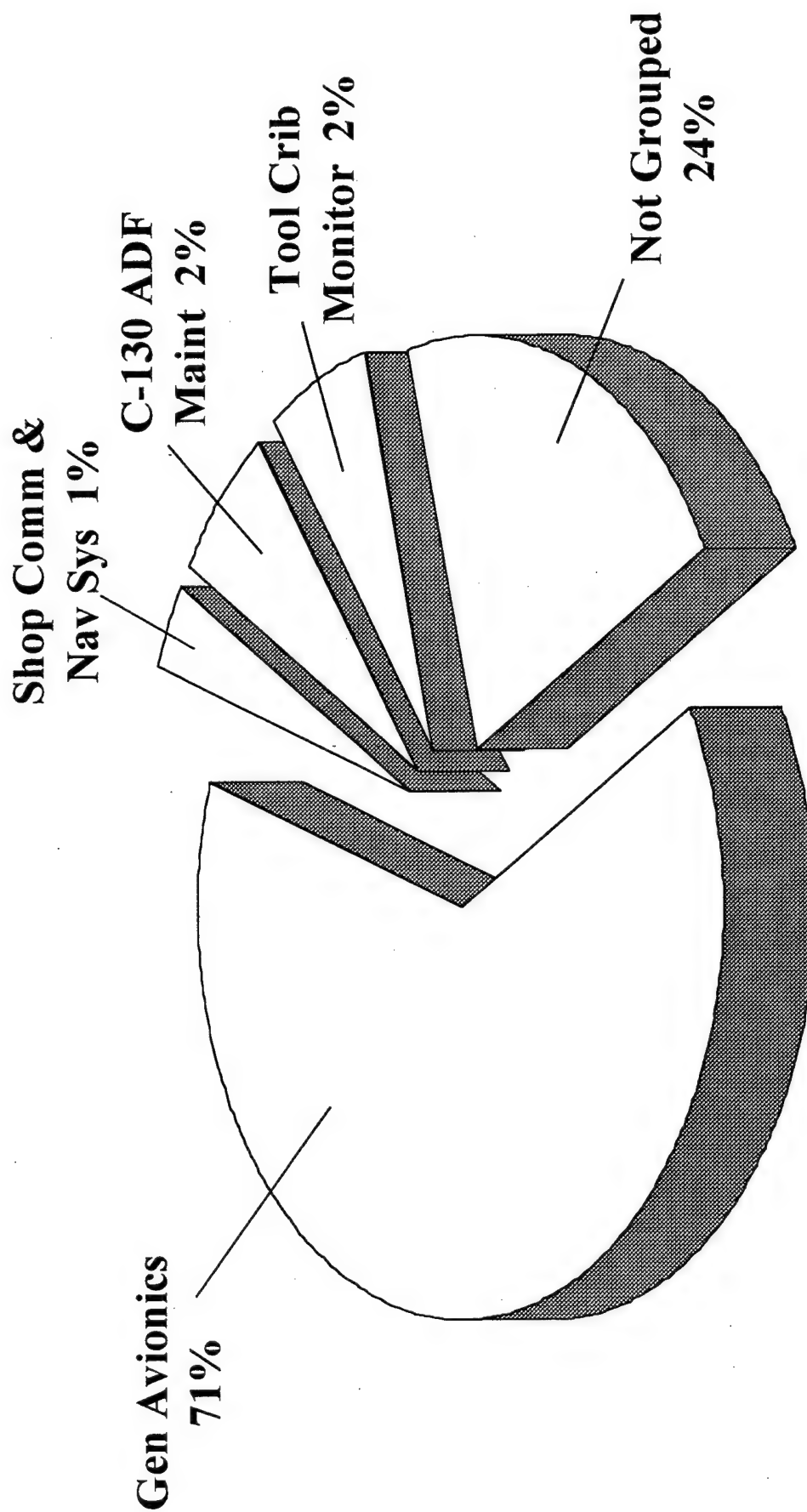
TABLE 18

RELATIVE PERCENT OF TIME SPENT ACROSS DUTIES BY
ACTIVE DUTY FIRST-ENLISTMENT AFSC 2A4X2 PERSONNEL

DUTIES		PERCENT TIME SPENT
A	MAINTAINING GENERAL AVIONICS SYSTEMS	18
B	MAINTAINING AVIONICS SYSTEM MOCKUPS, TEST STATIONS, OR PECULIAR TEST EQUIPMENT	*
C	MAINTAINING RADIO COMMUNICATIONS SYSTEMS	12
D	MAINTAINING RADIO NAVIGATION SYSTEMS	20
E	MAINTAINING RADAR NAVIGATION SYSTEMS, OTHER THAN NAVIGATION	5
F	MAINTAINING RADAR SYSTEMS	6
G	MAINTAINING IDENTIFICATION SYSTEMS	6
H	MAINTAINING EMERGENCY SYSTEMS	2
I	MAINTAINING INTERPHONE, PUBLIC ADDRESS (PA), OR WIRELESS SYSTEMS	4
J	MAINTAINING STATION KEEPING EQUIPMENT (SKE)	2
K	MAINTAINING DATA LINK CONTROL SYSTEMS	*
L	MAINTAINING SELF-CONTAINED NAVIGATION SYSTEMS (SCNSs)	1
M	MAINTAINING INTEGRATED AVIONICS SYSTEMS	*
N	PERFORMING GENERAL AIRCRAFT OR CROSS UTILIZATION (CUT) ACTIVITIES	12
O	PERFORMING MOBILITY AND CONTINGENCY ACTIVITIES	1
P	PERFORMING MAINTENANCE MANAGEMENT SYSTEM ACTIVITIES	7
Q	PERFORMING MANAGEMENT & SUPERVISORY ACTIVITIES	*
R	PERFORMING TRAINING ACTIVITIES	*
S	PERFORMING GENERAL ADMIN AND TECHNICAL ORDER SYSTEM ACTIVITIES	2
T	PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	3

* Denotes less than 1 percent members performing

NOTE: Columns may not add up to 100 percent due to rounding

TABLE 19

MOST COMMONLY PERFORMED TASKS FOR ACTIVE DUTY
FIRST-ENLISTMENT 2A4X2 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=308)
C127	Remove or install radio RTs, such as HF, UHF, SATCOM, or VHF-FM RTs	92
A2	Apply external power to aircraft	92
A20	perform general soldering	90
C113	Operationally check radio systems	86
D282	Remove or install TACAN RT units	86
A28	Perform safety wiring on avionics system equipment	85
D261	Operationally check TACAN systems	84
A44	Set up flightline maintenance stands	84
N887	Operate powered AGE, such as power units, heaters, or light carts	81
A47	Use illustrated parts breakdown (IPB) to order parts	80
I720	Operationally check interphone systems	80
D263	Operationally check VOR systems	80
C114	Operationally check secure voice systems	79
G645	Remove or install IFF control boxes	79
A43	Repair avionics system wiring or electrical connectors	79
A18	Open or close radomes	78
G649	Remove or install IFF RT units	78
G637	Operationally check IFF systems	75
A36	Remove or install common hardware, such as switches, knobs, or faceplates	75
A6	Clean facilities	75
I725	Remove or install interphone system LRUs	74
D255	Operationally check glidescope receiver systems	74
A34	Remove or install avionics system wiring coaxial cables, or triaxial cables	74
D289	Remove or install VOR receivers	74
A46	Trace signals through circuits using schematics or wiring diagrams	74
D258	Operationally check marker beacon systems	74
G648	Remove or install IFF Mode IV computers	73
C138	Remove or install secure voice system LRUs	73
D257	Operationally check localizer receiver systems	72
D279	Remove or install TACAN control boxes	72
A32	Remove or install aircraft access plates or panels	72
A29	Perform home station checks (HSCs), in-process inspections, isochronal inspections, or phased inspections	72

TABLE 20

EQUIPMENT USED OR OPERATED BY 20 PERCENT OR MORE OF
FIRST-JOB OR FIRST-ENLISTMENT AFSC 2A4X2 PERSONNEL

| | PERCENT MEMBERS MAINTAINING | |
| | 1ST JOB (N=211) | 1ST ENL (N=308) |
TEST EQUIPMENT		
Ammeters	21	20
Dummy Loads	40	45
Meters, Power	31	31
Meters, Voltage Standing Wave Ratio (VSWR)	36	38
Multimeters, Analog	51	50
Multimeters, Digital	92	93
Osilloscopes	36	40
Reflectometers, not Time Domain Reflectometers	18	20
TDRs	55	63
Voltmeters, Analog	23	24
Voltmeters, Digital, other than Integrating	23	24
Wattmeters, Thruline	57	65
FLIGHTLINE TEST SETS		
ID Friend or FOE	91	92
Radar Altimeter	49	44
Search and Weather Radar	39	36
Self-Contained Navigation	28	25
Tactical Air Navigation Systems	86	87
VOR/ILS	89	90

TABLE 21

TASKS WITH HIGHEST TRAINING EMPHASIS RATINGS

TASKS		TNG EMP	1ST JOB	1ST ENL	TSK DIFF
A20	Perform general soldering	6.71	87	90	4.00
A13	Isolate faulty avionics system wiring, coaxial cables, or triaxial cables	6.45	62	70	6.75
A47	Use illustrated parts breakdown (IPB) to order parts	6.35	76	80	4.45
A46	Trace signals through circuits using schematics or wiring diagrams	6.26	68	74	6.36
A45	Test avionics system wiring, coaxial cables, or triaxial cables	6.03	64	69	5.28
C113	Operationally check radio systems	5.87	84	86	4.17
C114	Operationally check secure voice systems	5.77	79	79	5.72
A7	Fabricate coaxial or triaxial cables	5.77	62	67	4.92
D261	Operationally check TACAN systems	5.77	82	84	4.35
A43	Repair avionics system wiring or electrical connectors	5.74	72	79	5.72
A8	Fabricate multiple wire cables	5.65	45	45	5.72
P1021	Open or close CAMS or G081	5.61	55	62	3.16
P1014	Clear or close out completed aircraft maintenance discrepancies in CAMS or G081	5.58	57	62	3.73
D263	Operationally check VOR systems	5.58	78	80	4.42
D255	Operationally check glidescope receiver systems	5.58	78	80	4.42
P1010	Access core automated maintenance system (CAMS) or G081 menus and data screens	5.52	54	60	4.12
D257	Operationally check localizer receiver systems	5.52	66	72	4.41
C108	Load Have Quick	5.45	63	67	5.24
D256	Operationally check GPS systems using self-tests	5.42	46	48	4.11
A2	Apply external power to aircraft	5.39	91	92	3.01

TE MEAN= 1.00; S.D. = 1.22
TD MEAN = 5.00; S.D. = 1.00

TABLE 22

TASKS WITH HIGHEST DIFFICULTY RATINGS

			PERCENT MEMBERS PERFORMING				
TASKS		TSK DIFF	1ST JOB	1ST ENL	2A452	2A472	TSK DIFF
A14	Isolate faulty discrete electronic components, such as resistors, capacitors, or semiconductor devices	7.92	18	21	29	13	1.74
F396	Adjust or align forward looking radar (FLR) antennas	7.54	1	1	1	0	.48
Q950	Determine cost factors for support agreements	7.53	0	0	0	4	.23
F485	Isolate FLR wiring harness malfunctions	7.48	0	1	1	0	.52
F421	Adjust or align terrain following or terrain avoidance receivers, other than for FLRs	7.34	0	1	1	0	.58
F412	Adjust or align terrain following or terrain avoidance antennas, other than for FLRs	7.30	1	2	3	1	.61
B54	Fabricate avionics system mockups	7.30	0	0	2	0	.32
F422	Adjust or align terrain following or terrain avoidance signal data converters (SDCs)	7.23	0	0	1	0	.32
N896	Perform ground engine runs	7.23	17	19	23	10	.71
F498	Isolate terrain following or terrain avoidance computer malfunctions, other than for FLRs	7.21	1	3	5	1	.65
F401	Adjust or align FLR receivers	7.15	1	1	0	0	.71
F397	Adjust or align FLR computers	7.12	1	1	0	0	.48
F413	Adjust or align terrain following or terrain avoidance computers, other than for FLRs	7.11	0	1	1	0	.61
F588	Repair terrain following or terrain avoidance computers, other than for FLRs	7.08	0	0	1	0	.35
F468	Calibrate installed terrain following or terrain avoidance systems, other than for FLRs	7.01	1	2	2	0	.35
F465	Boresight navigation system antennas	6.97	3	3	5	1	.65
F411	Adjust or align search and weather RT units	6.96	5	4	3	2	1.00
J751	Calibrate SKE electronic system test sets	6.95	0	0	0	1	.16

TD MEAN = 5.00; S.D. = 1.00

Various lists of tasks, accompanied by TE and TD ratings, are contained in the **TRAINING EXTRACT** package and should be reviewed in detail by technical school personnel. For a more detailed explanation of TE and TD ratings, see Task Factor Administration in the **SURVEY METHODOLOGY** section of this report.

Specialty Training Standard (STS) Analysis

A comprehensive review of the AFSC 2A4X2 STS, dated February 1994, was made by comparing survey data to STS elements. STS paragraphs containing knowledge information, mandatory entries, subject matter-knowledge-only requirements, or basic supervisory responsibilities were not examined. Task knowledge, performance elements, and dashed/"-" entries of the STS were compared against the standard set forth in AETCI 36-2601, paragraph 2.2, (i.e., include tasks performed or knowledge required by 20 percent or more of the personnel in a skill level (criterion group) of the Air Force Specialty).

A listing of the STS was then produced showing each STS paragraph and subparagraph, tasks matched, percent criterion group members performing, TE and TD ratings, and ATI. This listing is included in the Training Extract sent to the school for review. Criteria set forth in AETCI 36-2601 were used to review the relevance of each STS paragraph and subparagraph with matched tasks.

Using this approach, a substantial portion of STS paragraphs did not have tasks matched with at least 20 percent members performing when compared to the total population criterion groups mentioned above. This lack of support across so many elements is due to the high degree of diversity among the jobs or functions performed within the career ladder. However, since the STS is intended to provide comprehensive coverage of tasks performed by career ladder personnel across all jobs or functions, it is critical that job-specific tasks be included in the STS.

This diversity and variety of jobs within the AFSC 2A4X2 career ladder therefore warrant a different approach, or perspective, in examining the STS to ensure that all major jobs are adequately covered in the STS. Thus, a second printout was created showing the clusters and job groups identified and corresponding percent members performing data for tasks matched to each STS paragraph. By using this method, only six entries in the STS were not supported by OSR data. Examples of these entries are listed in Table 23. A complete listing of the STS paragraphs, with OSR data displayed for each of these jobs identified, can be found in the TRAINING EXTRACT report that accompanies this OSR. Training personnel and SMEs should review these areas closely to determine if continued inclusion in future revisions to the STS is warranted.

Tasks not matched to any element of the STS are listed at the end of the computer listing located in associated training documents. These were reviewed to determine if any tasks concentrate around particular functions or jobs. Examples of the 442 technical tasks performed by more than 20 percent or more criterion group members not referenced to the STS, are listed in Table 24. They involve bench checking avionics pressurization system line replacement units

TABLE 23

STS ITEMS NOT SUPPORTED BY SURVEY DATA

			PERCENT MEMBERS PERFORMING				
				C-130			
			SHOP &	ADF	RF	COMP	
	3-SKL	GEN	COMM NAV	MAINT	MUX	REPAIR	MOBILITY
STS ITEMS/TASKS	COURSE	AVIONICS	SYS				
14. **COMMUNICATION SYSTEMS**							
14.l. *Voice Warning Systems*							
14.1. (3) Perform operational check	-						
H687 Operationally check voice warning systems		14	0	0	0	4	0
14 **COMMUNICATION SYSTEMS**							
14.l. *Voice Warning Systems*							
14.1.(4) Basic troubleshooting	-						
H681 Isolate installed voice warning systems		7	0	0	0	4	0
14 **COMMUNICATION SYSTEMS**							
14.l. *Voice Warning Systems*							
14.1.(5) Remove system LRUs	-						
H699 Remove or install LRUs		9	2	0	0	4	0

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TABLE 23 (CONTINUED)

STS ITEMS NOT SUPPORTED BY SURVEY DATA

STS ITEMS/TASKS	3-SKL COURSE	SUPV	PERCENT MEMBERS PERFORMING QA INSPECTOR	MAINT ADMIN	TOOL CRIB MONITOR	TNG	FTD
14. **COMMUNICATION SYSTEMS**							
14.1. *Voice Warning Systems*							
14.1.(3) Perform operational check							
H687 Operationally check voice warning systems	-	0	0	0	0	14	0
14 **COMMUNICATION SYSTEMS**							
14.1. *Voice Warning Systems*							
14.1.(4) Basic troubleshooting							
H681 Isolate installed voice warning systems	-	0	0	0	0	0	0
14 **COMMUNICATION SYSTEMS**							
14.1. *Voice Warning Systems*							
14.1.(5) Remove system LRUs							
H699 Remove or install LRUs	-	0	0	0	0	0	0

TABLE 24

TECHNICAL TASKS PERFORMED BY 20 PERCENT OR MORE
CRITERION GROUP PERSONNEL AND NOT REFERENCED TO THE STS

STS ITEMS/TASKS		GEN AVIONICS	SHOP & COMM NAV SYS	C-130 ADF MAINT	RF MUX	COMP REPAIR	MOBILITY
A4	Bench check avionics pressurization system LRUs	21	27	0	13	42	0
A9	Ground avionics test equipment	58	54	45	38	83	5
A11	Isolate avionics pressurization system malfunctions	36	15	9	25	17	0
A24	Perform load procedures on encryption keyers	72	30	36	13	25	68
B50	Bench check mockup LRUs	35	97	0	94	100	0
B65	Repair mockup LRUs	28	90	0	88	100	0
C71	Adjust or align radio frequency indicators, such as dial readouts or knob positions	37	60	55	56	17	9
C77	Bench check radio control units	32	86	0	81	25	0
C121	Remove or install radio coupler controls or accessory units	58	14	27	0	17	27
D252	Operate associated systems while checking radio navigation systems	81	8	36	0	17	0
E357	Operate associated systems while checking radar navigation systems	64	4	45	0	17	0
F469	Inspect waveguides	58	23	36	0	58	0
H686	Operationally check underwater beacons	47	6	27	0	4	0
I714	Isolate microphone malfunctions	42	15	45	0	4	5
N870	Connect or Disconnect static grounds	66	4	55	0	4	5
N887	Operate powered AGE, such as power units, heaters, or light carts	80	5	82	6	25	9
O975	Operate chemical warfare personal protective equipment during contingency exercises or operations	25	9	0	4	59	13
P1012	Change CAMS or G081 data	46	57	18	75	54	0
P1013	Change maintenance management system printer paper	38	41	18	44	54	0

TABLE 24 (CONTINUED)

TECHNICAL TASKS PERFORMED BY 20 PERCENT OR MORE
CRITERION GROUP PERSONNEL AND NOT REFERENCED TO THE STS

STS ITEMS/TASKS		SUPV	QA INSPECTOR	MAINT ADMIN	TOOL CRIB MONITOR	TNG	FTD
A4	Bench check avionics pressurization system LRUs	2	0	0	0	7	0
A9	Ground avionics test equipment	3	0	0	0	21	0
A11	Isolate avionics pressurization system malfunctions	1	0	0	0	29	0
A24	Perform load procedures on encryption keyers	8	0	8	7	36	0
B507	Bench check mockup LRUs	7	4	0	0	21	14
B65	Repair mockup LRUs	5	0	0	0	0	0
C71	Adjust or align radio frequency indicators, such as dial readouts or knob positions	2	0	0	0	14	0
C77	Bench check radio control units	5	4	0	0	7	0
C121	Remove or install radio coupler controls or accessory units	3	0	0	0	7	0
D252	Operate associated systems while checking radio navigation systems	3	4	0	0	71	0
E357	Operate associated systems while checking radar navigation systems	1	0	0	0	64	0
F469	Inspect waveguides	4	7	0	0	36	0
H686	Operationally check underwater beacons	1	0	0	0	14	0
I714	Isolate microphone malfunctions	0	0	0	0	0	0
N870	Connect or Disconnect static grounds	7	0	0	7	29	0
N887	Operate powered AGE, such as power units, heaters, or light carts	12	4	0	0	43	0
O975	Operate chemical warfare personal protective equipment during contingency exercises or operations	13	0	8	0	0	0
P1012	Change CAMS or G081 data	41	19	77	13	29	0
P1013	Change maintenance management system printer paper	34	19	46	13	14	0

(LRU), grounding avionics test equipment, isolating avionics pressurization system malfunctions, repairing mockup LRUs, and inspecting waveguides (see Table 24). Training personnel should review these and other unreferenced tasks to determine if STS inclusion is warranted.

Electronic Principles (EP)

The Electronic Fundamental paragraph of the STS, and the EPs taught in the basic course can be examined using data obtained from the EP JI, administered April through July 1998. An extensive list of EP questions were included in the survey sample to help identify those principles used by AFSC 2A4X2 personnel in their present job. Table 25 displays those EP items that are used by more than 50 percent of AFSC 2A452 personnel.

Plan of Instruction (POI)

POI E3ABR2A432 000 Aircraft Communication/Navigation Systems Apprentice, dated December 1997 was reviewed against OSR data and the job structure described in the **SPECIALTY JOBS** section. JI tasks were matched to related training objectives in the entry-level course with assistance from the technical school SMEs. The method employed was similar to that of the STS percent members performing data for first-job (1-24 months TAFMS) personnel, first-enlistment (1-48 months TAFMS) personnel and TE and TD ratings.

POI blocks, units of instruction, and learning objectives were compared to the standard set forth in AETCI 36-2601, Table A2.1, Atch 2 (30 percent or more of the first-enlistment group performing tasks trained, along with sufficiently high TE and TD ratings on those tasks). By this guidance, tasks trained in the course which do not meet these criteria should be considered for elimination from the formal course, if not justified on some other acceptable basis.

From a review of the overall POI, the course gives newly assigned airmen a good introduction to the major aspects of the jobs that will most likely be performed in their first assignment. Twelve proficiency coded learning objectives were not supported by survey data. These learning objectives should be reviewed by training personnel to see if they should remain in the POI (see Table 26). Table 27 lists technical tasks performed by 30 percent or more first-enlistment personnel, but not referenced by the POI. Training personnel should also review these tasks.

TABLE 25

ELECTRONIC PRINCIPLES INVENTORY DATA
FOR AFSC 2A452 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASK NUMBER	TASK TITLE	AFSC 2A153
B152	B1-1 Do you use the multimeter to measure DC voltage values?	91
A145	A5-6 Do you use crimping tool to repair or make connections?	90
B153	B1-2 Do you use the multimeter to measure AC voltage values?	89
A149	A5-10 Do you repair or fabricate coaxial cables?	88
A2	A1-2 Do you use basic DC terms?	88
A3	A1-3 Do you use basic AC terms?	88
A140	A5-1 Do you solder or desolder hardwire connections?	85
A4	A1-4 Do you trace schematics or block diagrams of circuits containing conductors, fuses, lamps, switches, or batteries?	84
A15	A1-15 Do you trace schematic or block diagrams of circuits containing relays?	83
I691	I1-5 Do you measure RF output power using wattmeters?	82
B188	B4-4 Do you use digital multimeters?	79
A5	A1-5 Do you troubleshoot circuits containing conductors, fuses, lamps, switches, or batteries?	78
A16	A1-16 Do you troubleshoot circuits to isolate a faulty relay?	76
I687	I1-1 Do you measure RF power?	74
A1	A1-1 Do you use metric terms (example milli, kilo, mega)?	74
H547	H1-4 Do you perform tasks on flexiable coaxial transmission lines?	70
A148	A5-9 Do you repair or fabricate multiconductor cables?	69
B158	B1-7 Do you use the multimeter to measure circuit resistance?	69
A19	A1-19 Do you check relays for continuity using an ohmmeter?	68
A9	A1-9 Do you trace schematic or block diagrams of circuits containing resistors?	65
H555	H1-12 Do you troubleshoot transmission lines?	62
B200	B4-16 Do you use power meters?	61
H551	H1-8 Do you measure standing wave radio (SWR) on transmission lines?	61
H686	H5-30 Do you perform tasks on antennas with omnidirectional radiation patterns?	58
B159	B1-8 Do you use the multimeter to measure component resistance?	57
A81	A3-1 Do you trace schematic or block diagrams of circuits containing diodes?	55
J704	J1-10 Do you trace block diagrams of circuits containing speakers?	55
B155	B1-4 Do you use the multimeter to measure DC current values?	55
A14	A1-14 Do you check resistors using an ohmmeter?	54
B156	B1-5 Do you use the multimeter to measure AC current values?	54
H561	H1-18 Do you trace schematic or block diagrams of circuits containing waveguides?	53
J707	J1-12 Do you troubleshoot to isolate a faulty speaker?	53
H589	H4-2 Do you trace block diagrams of AM transmitters	51
H565	H1-22 Do you remove or install waveguides or associated coupling hardware components?	51

TABLE 26

EXAMPLES OF POI NOT SUPPORTED BY OSR DATA
(PERCENT MEMBERS PERFORMING)

POI REFERENCE/TASKS		TNG EMP	1ST JOB (N=211)	1ST ENL (N=308)	TSK DIF
2.7.2.a.	TO 12R2-2A1C25-2, a minimum performance checklist, and an interphone trainer, perform a selected minimum performance check on the AIC -25 Interphone System in accordance with the progress check	.00	2	3	4.89
I707	Bench check interphone system LRUs				
2.7.2.c.	Using TO 12R2-2AIC25-2, determine procedures used to remove and replace an SRU or component.	.19	8	9	5.34
I731	Repair interphone LRUs				

TABLE 27

TECHNICAL TASKS PERFORMED BY 30 PERCENT OR MORE
CRITERION GROUP PERSONNEL AND NOT REFERENCED TO THE POI

TASKS		TNG EMP	1ST ENL (N=308)	TSK DIF
A22	Perform home station checks (HSCs), in-progress inspections, isochronal inspections, or phased inspections	2.58	62	4.90
A29	Perform time compliance technical order (TCTO) modifications on avionics systems	3.06	72	6.32
A34	Remove or install avionics system wiring, coaxial cables, or triaxial cables	4.26	74	5.19
A40	Remove or install flush mount antennas	3.45	67	4.26
A41	Remove or install radomes	2.65	53	4.59
C107	Isolate installed secure voice system malfunctions	4.81	54	5.93
C109	Operate associated systems while checking radio systems	5.00	62	4.90
C113	Operationally check radio systems	5.87	86	4.17
C122	Remove or install radio couplers	3.87	62	4.33
D252	Operate associated systems while checking radio navigation systems	4.61	56	5.02
D253	Operationally check ADF systems	4.32	66	4.47
D254	Operationally check DME systems	4.65	50	4.29
D261	Operationally check TACAN systems	5.77	84	4.35
I721	Operationally check PA systems	2.84	57	4.38
N882	Launch or recover aircraft	3.84	63	4.07
N905	Refuel aircraft	2.77	59	4.11

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JOB SATISFACTION ANALYSIS

An examination of job satisfaction indicators can be very useful for career ladder managers as they attempt to determine possible factors affecting job performance of career ladder airmen. Job satisfaction data can be expanded to provide indications of general attitudes within specific DAFSC groups.

With this in mind, job satisfaction responses for AD AFSC 2A4X2 personnel were analyzed and provide the following comparisons: (1) among TAFMS groups of the AFSC 2A4X2 career ladder and a comparative sample of mission equipment management personnel surveyed in 1997; and (2) between respondents to both current and previous OSRs.

Table 28 shows the comparison of TAFMS group data of AFSC 2A4X2 respondents to a comparative sample of other direct support career ladders surveyed in 1997. These data provide a relative measure of how AFSC 2A4X2 personnel job satisfaction responses compare with similar Air Force specialties. AFSC 2A4X2 personnel show higher satisfaction ratings than their comparative sample counterparts in most satisfaction areas. However, all TAFMS groups reported lower satisfaction in perceived use of training than members of the 1997 comparative sample.

An indication of changes in job satisfaction perceptions within the career ladder over time is provided in Table 29. Table 29 compares TAFMS group data for current survey respondents to that of previous survey respondents. Comparison of job satisfaction indicator responses of the current survey TAFMS groups to those in the 1994 survey indicate that responses are higher in perceived use of training than the 1994 survey.

Finally, job satisfaction data for identified jobs are provided in Table 30. Generally, job satisfaction data are high for personnel in identified jobs. Three jobs, RF MUX Repair, Tool Crib Monitor, and Maintenance Administrator, however, did show some fairly low satisfaction ratings.

IMPLICATIONS

As explained in the **INTRODUCTION,** this survey was conducted primarily to provide training personnel with current information on the Aircraft Communication and Navigation Systems career ladder for use in reviewing current training programs and training documents. Specialty Job Analysis indicates no big changes have occurred since the last survey in 1994 (AFSC 2A4X2). Overall job progression is normal and shows a distinct pattern as one moves from the 3- to the 7-skill level. Job satisfaction is fairly high, and no serious problem areas were noted. Analysis of STS items reflect adequate support for some areas, however, there are unsupported items. These STS items should be closely reviewed to decide whether they belong in the STS. Some tasks, not referenced to the STS, which had supporting data are also

TABLE 28

COMPARISON OF JOB SATISFACTION INDICATORS FOR AFSC 2A4X2
TAFMS GROUPS IN CURRENT STUDY TO A COMPARATIVE SAMPLE
(PERCENT MEMBERS RESPONDING)

	1-48 MONTHS TAFMS		49-96 MONTHS TAFMS		97+ MONTHS TAFMS	
	AFSC 2A4X2 (N=308)	COMP SAMPLE (N=3,883)	AFSC 2A4X2 (N=187)	COMP SAMPLE (N=2,651)	AFSC 2A4X2 (N=616)	COMP SAMPLE (N=6,033)
EXPRESSED JOB INTEREST:						
INTERESTING	75	65	69	65	72	74
SO-SO	15	19	20	20	15	17
DULL	15	16	11	15	12	9
PERCEIVED USE OF TALENTS:						
FAIRLY WELL TO PERFECT	79	72	80	75	80	83
NONE TO VERY LITTLE	20	28	20	25	20	17
PERCEIVED USE OF TRAINING:						
FAIRLY WELL TO PERFECT	79	85	79	82	69	80
NONE TO VERY LITTLE	21	15	21	18	31	20
SENSE OF ACCOMPLISHMENT FROM JOB:						
SATISFIED	70	64	71	66	69	72
NEUTRAL	17	17	11	15	10	11
DISSATISFIED	14	19	18	19	20	17
REENLISTMENT INTENTIONS:						
YES OR PROBABLY YES	44	51	56	66	65	71
NO OR PROBABLY NO	54	48	44	34	10	8
WILL RETIRE	0	0	0	0	25	20

NOTE: Columns may not add to 100 due to rounding or nonresponse
Comparative data are from AFSCs 2A3X2 A/B/C, 2A5X3 A/B/C, 2A6X3, 2A6X5, 2A6X6, 2A7X1, 2A7X3, 2E1X1, 2E8X1, 2M0X2, 2W0X2, and 2W2X1 surveyed in 1997

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TABLE 29

COMPARISON OF JOB SATISFACTION INDICATORS FOR AFSC 2A4X2
TAFMS GROUPS IN CURRENT STUDY TO PREVIOUS STUDIES
(PERCENT MEMBERS RESPONDING)

	1-48 MONTHS TAFMS		49-96 MONTHS TAFMS		97+ MONTHS TAFMS	
	1998 AFSC 2A4X2 (N=107)	1994 AFSC 2A4X2 (N=126)	1998 AFSC 2A4X4 (N=110)	1994 AFSC 2A4X2 (N=111)	1998 AFSC 2A4X2 (N=119)	1992 AFSC 2A4X2 (N=182)
EXPRESSED JOB INTEREST:						
INTERESTING	75	83	69	73	72	70
SO-SO	15	12	20	14	15	17
DULL	15	5	11	13	12	13
PERCEIVED USE OF TALENTS:						
FAIRLY WELL TO PERFECT	79	83	80	75	80	71
NONE TO VERY LITTLE	20	17	20	25	20	29
PERCEIVED USE OF TRAINING:						
FAIRLY WELL TO PERFECT	79	77	79	68	69	64
NONE TO VERY LITTLE	21	23	21	30	31	36
REENLISTMENT INTENTIONS:						
YES OR PROBABLY YES	44	64	56	66	65	75
NO OR PROBABLY NO	54	36	44	34	10	13
WILL RETIRE	0	0	0	0	25	12

NOTE: Columns may not add to 100 percent due to rounding or nonresponse

TABLE 30

JOB SATISFACTION INDICATORS FOR AFSC 2A4X2 JOBS
(PERCENT MEMBERS RESPONDING)

	GENERAL AVIONICS CLUSTER (N=1,348)	SHOP COMM & NAV SYS CLUSTER (N=239)	C-130 ADF MAINT JOB (N=11)	RF MUX JOB (N=16)	COMP REPAIR JOB (N=24)	MOBILITY JOB (N=22)	FTD JOB (N=14)
EXPRESSED JOB INTEREST:							
INTERESTING	75	58	82	69	71	82	93
SO-SO	16	18	18	6	25	14	7
DULL	9	24	0	25	4	5	0
PERCEIVED USE OF TALENTS:							
FAIRLY WELL TO PERFECT	89	95	91	69	92	86	100
NONE TO VERY LITTLE	11	5	9	31	8	14	0
PERCEIVED USE OF TRAINING:							
FAIRLY WELL TO PERFECT	85	76	100	50	83	86	93
NONE TO VERY LITTLE	15	24	01	44	17	14	7
SENSE OF ACCOMPLISHMENT FROM JOB:							
SATISFIED	72	53	64	63	67	68	93
NEUTRAL	12	17	36	13	8	18	0
DISSATISFIED	15	24	0	44	17	14	7
REENLISTMENT INTENTIONS:							
YES OR PROBABLY YES	69	62	64	69	71	63	86
NO OR PROBABLY NO	23	30	36	31	29	23	7
WILL RETIRE	8	8	0	0	0	9	7

NOTE: Columns may not add to 100 percent due to rounding or nonresponse

TABLE 30 (CONTINUED)

JOB SATISFACTION INDICATORS FOR AFSC 2A4X2 JOBS
(PERCENT MEMBERS RESPONDING)

	SUPV CLUSTER (N=210)	MAINT ADMIN JOB (N=13)	TOOL CRIB MONITOR JOB (N=15)	QA INSPECTOR JOB (N=27)	FTD JOB (N=14)	TNG JOB (N=14)
EXPRESSED JOB INTEREST:						
INTERESTING	71	69	40	74	93	86
SO-SO	15	8	53	22	7	7
DULL	12	23	7	4	0	7
PERCEIVED USE OF TALENTS:						
FAIRLY WELL TO PERFECT	88	43	67	89	100	86
NONE TO VERY LITTLE	21	31	33	11	0	14
PERCEIVED USE OF TRAINING:						
FAIRLY WELL TO PERFECT	88	69	67	89	93	86
NONE TO VERY LITTLE	21	31	33	11	7	14
SENSE OF ACCOMPLISHMENT FROM JOB:						
SATISFIED	64	62	60	74	93	79
NEUTRAL	11	8	27	4	0	0
DISSATISFIED	23	31	13	22	7	14
REENLISTMENT INTENTIONS:						
YES OR PROBABLY YES	55	54	67	67	86	71
NO OR PROBABLY NO	6	23	27	7	7	21
WILL RETIRE	38	23	7	26	7	7

NOTE: Columns may not add to 100 percent due to rounding or nonresponse

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recommended for review and possible inclusion in future revisions of the training program. In addition, a thorough analysis of the POI indicated that all learning objectives are supported by survey data. However, 476 technical tasks performed by 30 percent or more first-enlistment personnel are not referenced by the POI. Training personnel should also review these tasks.

The findings of this OSR come directly from survey data collected from AFSC 2A4X2 personnel worldwide. Much of the data are compiled into extracts that are excellent tools in the decision-making process. These data extracts should be used when training or utilization decisions are made.

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APPENDIX A

REPRESENTATIVE TASKS PERFORMED BY
MEMBERS OF CAREER LADDER JOBS

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TABLE A1

GENERAL AVIONICS CLUSTER
(STG178, N=1,348)

TYPICAL TASKS		PERCENT
C127	Remove or install radio RTs, such as HF, UHF, SATCOM, or VHF-FM RTs	98
A2	Apply external power to aircraft	96
D282	Remove or install TACAN RT units	96
D261	Operationally check TACAN systems	95
A20	Perform general soldering	95
A43	Repair avionics system wiring or electrical connectors	95
A47	Use illustrated parts breakdown (IPB) to order parts	94
G649	Remove or install IFF RT units	93
C113	Operationally check radio systems	93
G645	Remove or install IFF control boxes	92
A36	Remove or install common hardware, such as switches, knobs, or faceplates	92
A28	Perform safety wiring on avionics systems equipment	92
A13	Isolate faulty avionics system wiring, coaxial cables, or triaxial cables	91
C120	Remove or install radio control units	91
D263	Operationally check VOR systems	91
A46	Trace signals through circuits using schematics or wiring diagrams	91
A44	Set up flightline maintenance stands	90
A35	Remove or install blade antennas	90
A45	Test avionics system wiring, coaxial cables, or triaxial cables	89
A34	Remove or install avionics system wiring, coaxial cables, or triaxial cables	89
D289	Remove or install VOR receivers	89
G637	Operationally check IFF systems	88
A32	Remove or install aircraft access plates or panels	88
D257	Operationally check localizer receiver systems	88
D255	Operationally check glidescope receiver systems	88
A18	Open or close radomes	86
D258	Operationally check marker beacon systems	86
I725	Remove or install interphone system LRUs	85
A29	Perform time compliance technical order (TCTO) modifications on avionics systems	85
C114	Operationally check secure voice systems	84

TABLE A2

SHOP COMMUNICATION & NAVIGATION SYSTEMS CLUSTER
(STG127, N=239)

TYPICAL TASKS		PERCENT
C81	Bench check radio RTs, such as HF, UHF, SATCOM, or VHF-FM RTs	97
B48	Adjust or align mockup LRUs	97
B50	Bench check mockup LRUs	97
A20	Perform general soldering	96
B55	Isolate mockup LRU malfunctions	94
C72	Adjust or align radio receiver/transmitters (RTs), such as high frequency (HF), ultrahigh frequency (UHF), satellite communications (SATCOM), or very high frequency-frequency modulation (VHF-FM) RTs	94
B61	Perform preventive maintenance on test benches	91
B65	Repair mockup LRUs	90
B49	Adjust or align mockup shop replaceable units (SRUs)	87
A47	Use illustrated parts breakdown (IPB) to order parts	87
B63	Remove or install mockup LRUs	86
C77	Bench check radio control units	86
A7	Fabricate coaxial or triaxial cables	85
B51	Bench check mockup SRUs	84
A19	Perform corrosion control procedures on avionics equipment	82
B64	Remove or install mockup SRUs	82
B60	Perform preventive maintenance inspections (PMIs) on peculiar test equipment for mockups	82
D197	Bench check TACAN RT units	81
A6	Clean facilities	81
C142	Repair radio RTs, such as HF, UHF, SATCOM, or VHF-FM RTs	80
G619	Bench check IFF RT units	80
A36	Remove or install common hardware, such as switches, knobs, or faceplates	78
I707	Bench check interphone system LRUs	79
D194	Bench check TACAN control boxes	79
C68	Adjust or align radio control units	77

TABLE A3

C-130 ADF MAINTENANCE JOB
(ST185, N=11

TYPICAL TASKS		PERCENT
D269	Remove or install ADF receivers	100
D266	Remove or install ADF electronic tuning units	100
A2	Apply external power to aircraft	100
A28	Perform safety wiring on avionics systems equipment	100
C127	Remove or install radio RTs, such as HF, UHF, SATCOM, or VHF-FM RTs	100
D159	Adjust or align ADF receivers	91
D156	Adjust or align ADF electronic tuning units	91
D155	Adjust or align automatic direction finder (ADF) control boxes	91
D210	Isolate ADF electronic tuning unit malfunctions	91
D209	Isolate ADF control box malfunctions	91
I713	Isolate interphone system LRU malfunctions	91
A7	Fabricate coaxial or triaxial cables	91
C138	Remove or install secure voice system LRUs	91
A25	Perform power or signal loss checks on radio frequency (RF) cables	91
A46	Trace signals through circuits using schematics or wiring diagrams	91
A13	Isolate faulty avionics system wiring, coaxial cables, or triaxial cables	82
L839	Remove or install SCNS LRUs	82
D282	Remove or install TACAN RT units	82
D211	Isolate ADF indicator malfunctions	82
N887	Operate powered AGE, such as power units, heaters, or light carts	82
A34	Remove or install avionics system wiring, coaxial cables, or triaxial cables	82
A18	Open or close radomes	82
D265	Remove or install ADF control boxes	82
I725	Remove or install interphone system LRUs	82
A43	Repair avionics system wiring or electrical connectors	82
C125	Remove or install radio longwire antennas	82
D213	Isolate ADF electronic tuning unit malfunctions	82
I720	Operationally check interphone systems	82
A6	Clean facilities	82
H684	Operationally check ELTs	82

TABLE A4

RF MULTIPLEXER (RFMUX) REPAIR JOB
(STG200, N=16)

TYPICAL TASKS		PERCENT
B62	Prepare mockup test stations for operations	100
B60	Perform preventive maintenance inspections (PMIs) on peculiar test equipment for mockups	100
B48	Adjust or align mockup LRUs	94
B50	Bench check mockup LRUs	94
A20	Perform general soldering	94
B63	Remove or install mockup LRUs	94
A21	Perform high reliability soldering	94
C89	Bench check SATCOM modems	94
B49	Adjust or align mockup shop replaceable units (SRUs)	94
B55	Isolate mockup LRU malfunctions	94
A47	Use illustrated parts breakdown (IPB) to order parts	88
C81	Bench check radio RTs, such as HF, UHF, SATCOM, or VHF-FM RTs	88
C142	Repair radio RTS, such as HF, UHF, SATCOM, or VHF-FM RTs	88
A46	Trace signals through circuits using schematics or wiring diagrams	88
A14	Isolate faulty discrete electronic components, such as resistors, capacitors, or semiconductor devices	88
L811	Bench check airborne launch control system LRUs	88
L846	Repair MILSTAR system LRUs	88
C72	Adjust or align radio receiver/transmitters (RTs), such as high frequency (HF), ultrahigh frequency (UHF), satellite communications (SATCOM), or very high frequency-frequency modulation (VHF-FM) RTs	88
B56	Isolate mockup SRU malfunctions	88
B64	Remove or install mockup SRU malfunctions	88
C149	Repair SATCOM modems	88
A29	Perform time compliance technical order (TCTO) modifications on avionics systems	88
B57	Isolate peculiar test equipment malfunctions	88
B65	Repair mockup LRUs	88
A7	Fabricate coaxial or triaxial cables	88
L801	Adjust or align airborne launch control system LRUs	88
C84	Bench check SATCOM ASR printers or teleprinters	88

TABLE A5

COMPONENT REPAIR JOB
(STG306, N=24)

TYPICAL TASKS		PERCENT
B50	Bench check mockup LRUs	100
B51	Bench check mockup SRUs	100
B63	Remove or install mockup LRUs	100
B48	Adjust or align mockup LRUs	100
B49	Adjust or align mockup shop replaceable units (SRUs)	100
F423	Adjust or align terrain following or terrain avoidance transmitters, other that for FLRs	96
F463	Bench check terrain following or terrain avoidance transmitters, other than for FLRs	96
F461	Bench check terrain following or terrain avoidance receivers, other than for FLRs	96
F452	Bench check terrain following or terrain avoidance antennas, other than for FLRs	96
F412	Adjust or align terrain following or terrain avoidance antennas, other than for FLRs	96
A19	Perform corrosion control procedures on avionics equipment	96
A47	Use illustrated parts breakdown (IPB) to order parts	96
F508	Isolate terrain following or terrain avoidance transmitter malfunctions, other than for FLRs	96
A6	Clean facilities	96
F497	Isolate terrain following or terrain avoidance antenna malfunctions, other than for FLRs	96
F506	Isolate terrain following or terrain avoidance receiver malfunctions, other than for FLRs	96
F453	Bench check terrain following or terrain avoidance computers, other than for FLRs	96

TABLE A6

MOBILITY JOB
(STG249, N=22)

	TYPICAL TASKS	PERCENT
O984	Pack or palletize mobility or contingency equipment for shipment or movement	100
O996	Prepare equipment for deployments	95
O979	Operate portable radios, such as field radios, during contingency exercises or operations	95
O976	Operate field generators during contingency exercises	95
O100	Set up or tear down shelters	91
O958	Don or doff chemical warfare personal protective clothing	86
O960	Erect tents	86
O976	Operate field generators during contingency exercises or operations	82
O987	Perform camouflage procedures	82
O1006	Tear down, inspect, clean, and reassemble weapons, such as M-16 rifles	82
A20	Perform general soldering	82
O982	Operate M-series vehicles during contingency exercises or operations	77
A7	Fabricate coaxial or triaxial cables	77
C127	Remove or install radio RTs, such as HF, UHF, SATCOM, or VHF-FM RTs	73
O988	Perform camp security	68
A24	Perform load procedures on encryption keyers	68
C113	Operationally check radio systems	64
C115	Preset frequencies In radio control units	64
O998	Process classified materials or documents at deployed locations	64
A47	Use illustrated parts breakdown (IPS) to order parts	64
A8	Fabricate multiple wire cables	64

TABLE A7

SUPERVISION CLUSTER
(STG051, N=210)

TYPICAL TASKS		PERCENT
Q1104	Supervise military personnel	90
Q1040	Conduct supervisory performance feedback sessions	88
Q1044	Counsel subordinates concerning personal matters	86
Q1094	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	84
Q1077	Evaluate personnel for compliance with performance standards	82
Q1090	Inspect personnel for compliance with military standards	81
Q1048	Determine or establish work assignments or priorities	81
Q1110	Write performance reports or supervisory appraisals	79
Q1091	Interpret policies, directives, or procedures for subordinates	78
Q1112	Write recommendations for awards or decorations	78
Q1054	Develop or establish work methods or procedures	76
Q1078	Evaluate personnel for compliance with military standards	73
Q1034	Assign personnel to work areas or duty positions	71
Q1080	Evaluate work schedules	70
Q1042	Conduct supervisory orientations for newly assigned personnel	70
Q1037	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	69
Q1038	Conduct self-inspections or self-assessments	64
R1127	Evaluate personnel to determine training needs	63
Q1089	Initiate actions required due to substandard performance of personnel	63
Q1046	Determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	62
Q1081	Evaluate workload requirements	61

TABLE A8

QA INSPECTOR JOB
(STG135, N=27)

TYPICAL TASKS		PERCENT
Q1108	Write inspection reports	89
Q1041	Conduct safety inspections of equipment or facilities	85
Q1094	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	81
Q1072	Evaluate job hazards or compliance with Air Force Occupational Safety and Health (AFOSH) program	78
Q1038	Conduct self-inspections or self-assessments	78
Q1092	Investigate accidents or incidents	74
Q1079	Evaluate safety or security programs	74
Q1067	Evaluate accident or incident reports	74
T1181	Inspect consolidated tool kits (CTKs)	74
Q1074	Evaluate job-related suggestions	70
S1144	Complete accident or incident reports	67
T1176	Evaluate serviceability of equipment, tools, parts, or supplies	67
Q1077	Evaluate personnel for compliance with performance standards	63
Q1071	Evaluate inspection report findings or inspection procedures	63
Q1102	Review drafts of policy directives, instructions, or manuals	63

TABLE A9

MAINTENANCE ADMINISTRATOR JOB
(STG148, N=13)

TYPICAL TASKS		PERCENT
P1010	Access core automated maintenance system (CAMS) or G081 menus and data screens	100
P1021	Open or close CAMS or G081	100
P1017	Create aircraft or support equipment maintenance discrepancies in CAMS or G081	85
P1012	Change CAMS or G081 data	77
P1022	Perform CAMS or G081 inquiries for scheduled aircraft discrepancies	69
P1026	Perform CAMS or G081 interface with base supply	62
P1024	Perform CAMS or G081 inquiries for uncompleted maintenance event listings	54
P1011	Analyze CAMS or G081 data	54
P1014	Clear or close out completed aircraft maintenance discrepancies in CAMS or G081	46
P1029	Schedule aircraft maintenance discrepancies in CAMS or G081	39
S1165	Maintain or update status indicators, such as boards, graphs, or charts	39
P1018	Defer aircraft maintenance discrepancies in CAMS or G081	38
P1032	Verify accuracy of daily inputs in CAMS or G081	31
T1173	Coordinate maintenance of equipment with appropriate agencies	31
S1143	Compile data for records, reports, logs, or trend analyses	31
P1028	Reschedule aircraft maintenance discrepancies in CAMS or G081	31

TABLE A10

TOOL CRIB MONITOR JOB
(STG214, N=15)

TYPICAL TASKS		PERCENT
T1176	Evaluate serviceability of equipment, tools, parts, or supplies	100
T1181	Inspect consolidated tool kits (CTKs)	93
T1182	Inventory equipment, tools , parts, or supplies	87
T1190	Store equipment, tools, parts, or supplies	87
T1183	Issue or log turn-ins of equipment, tools, parts, or supplies	80
A6	Clean facilities	73
T1189	Pick up or deliver equipment, tools, parts, or supplies	73
T1191	Store HAZMAT	67
T1177	Identify and report equipment or supply problems	60
T1187	Maintain documentation on items requiring periodic inspections	60
A20	Perform general soldering	53
T1180	Initiates requisitions for equipment , tools, parts, or supplies	47
Q1041	Conduct safety inspections of equipment or facilities	47
T1173	Coordinate maintenance of equipment with appropriate agencies	47
T1184	Maintain benchstock level requirements	47
T1185	Maintain precision measurement equipment (PME) calibration schedules	40
Q1107	Supervise military personnel	40
Q1044	Counsel subordinates concerning personal matters	40
A47	Use illustrated parts breakdown (IPS) to order parts	40
S1164	Maintain TO libraries	33
T1175	Establish benchmark level requirements	33
T1186	Maintain supply listings	27
T1172	Coordinate supply-related matters with appropriate agencies	27
T1179	Initiate letters of justification for supply-related matters	27
Q1048	Determine or establish work assignments or priorities	27
T1178	Initiate documentation to turn in excess or surplus property	27

TABLE A11

FTD JOB
(STG184, N=14)

TYPICAL TASKS		PERCENT
R1134	Personalize lesson plans	100
R1118	Conduct formal course classroom training	93
R1133	Maintain training records or files	93
R1114	Administer or score tests	93
E361	Operationally check radio or radar altimeter systems	93
R1122	Develop formal course curricula, plans of instruction (POIs), or specialty training standards (STSs)	93
R1124	Develop training materials or aids	86
R1120	Counsel trainees on training progress	86
A46	Trace signals through circuits using schematics or wiring diagrams	86
C127	Remove or install radio RTs, such as HF, UHF, SATCOM, or VHF-FM RTs	86
I720	Operationally check interphone systems	86
G637	Operationally check IFF systems	86
D261	Operationally check TACAN systems	86
D263	Operationally check VOR systems	86
R1123	Develop performance tests	86
C113	Operationally check radio systems	79
R1140	Write test questions	79
C109	Operate associated systems while checking radio systems	79
D255	Operationally check glidescope receiver systems	79
D257	Operationally check localizer receiver systems	79
D282	Remove or install TACAN RT units	79
D289	Remove or install VOR receivers	79
C115	Preset frequencies In radio control units	79
R1132	Inspect training materials or aids for operation or suitability	71
D252	Operate associated systems while checking radar navigation systems	71

TABLE A12

TRAINING JOB
(STG172, N=14)

TYPICAL TASKS		PERCENT
R1118	Conduct formal course classroom training	100
R1133	Maintain training records or files	93
R1114	Administer or score tests	93
R1120	Counsel trainees on training progress	93
R1131	Evaluate progress of trainees	93
R1124	Develop training materials or aids	71
R1140	Write test questions	64
R1134	Personalize lesson plans	57
R1117	Complete student entry or withdrawal forms	57
R1123	Develop performance tests	50
R1122	Develop formal course curricula, plans of instruction (POIs), or specialty training standards (STSs)	50
A6	Clean facilities	43
R1132	Inspect training materials or aids for operation or suitability	43
A46	Trace signals through circuits using schematics or wiring diagrams	29
Q1077	Evaluate personnel for compliance with performance standards	29
R1126	Establish or maintain study reference files	29
R1125	Develop training programs, plans , or procedures	29
Q1107	Supervise military personnel	21
T1182	Inventory equipment, tools, parts, or supplies	21
Q1091	Interpret policies, directives, or procedures for subordinates	21
T1176	Evaluate serviceability of equipment, tools, parts, or supplies	21
Q1053	Develop or establish work methods or procedures	21
R1137	Procure training aids, space, or equipment	21